JUN 15 1995 55 STAR

ENGINEERING DATA TRANSMITTAL

Page 1 of 1

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1	WHC-SD-WM-DP-115	N/A	0	45-Day Safety Screen Results for Tank 241-C-204, Auger Samples 95-AUG-022 and 95-AUG-023	Q	2	1	

16. KEY

Approval Designator (F)	Reason for Transmittal (G)	Disposition (H) & (I)
E, S, Q, D or N/A (see WHC-CM-3-5, Sec.12.7)	1. Approval 2. Release 3. Information 4. Review 5. Post-Review 6. Dist. (Receipt Acknow. Required)	1. Approved 2. Approved w/comment 3. Disapproved w/comment 4. Reviewed no/comment 5. Reviewed w/comment 6. Receipt acknowledged

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2	1	Cog.Eng. J.M. Conner									
2	1	Cog. Mgr. J.G. Kristofzski		6-13-95							
2	1	QA W.A. Hendricksen		6/14/95							
		Safety									
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JUL 1995 RECEIVED EDMC

18. A.E. Young — Signature of EDT Originator — 5-31-95 Date

19. Authorized Representative for Receiving Organization — Date

20. J.G. Kristofzski — Cognizant Manager — 6-13-95 Date

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- [ ] Approved
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This document was reviewed following the procedures described in WHC-CM-3-4 and is:

APPROVED FOR PUBLIC RELEASE

WHC Information Release Administration Specialist:

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SUPPORTING DOCUMENT

1. Total Pages 48

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6. Author

Name: John M. Conner

Signature

Organization/Charge Code 75310/MDR21

7. Abstract

N/A

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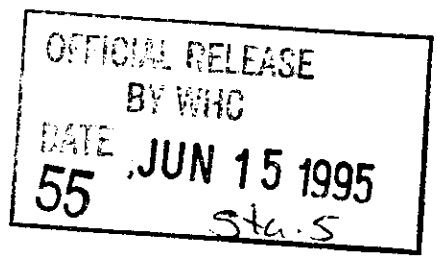

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WHC-SD-WM-DP-115, REV. 0

ANALYTICAL SERVICES

45-DAY SAFETY SCREEN RESULTS FOR TANK 241-C-204, AUGER SAMPLES 95-AUG-022 AND 95-AUG-023

Date Printed: June 14, 1995

TABLE OF CONTENTS

This Document consists of pages 1 through 39, pages 4.1-4.3, 26.1-26.3.

NARRATIVE

45-DAY SAFETY SCREEN RESULTS FOR TANK 241-C-204, AUGER SAMPLES 95-AUG-022 AND 95-AUG-023

ANALYTICAL SUMMARY

Two auger samples from tank 241-C-204 (C-204) were received at the 222-S Laboratories and underwent safety screening analysis, consisting of differential scanning calorimetry (DSC), thermogravimetric analysis (TGA), and total alpha activity. The three samples submitted for energetics determination by DSC exceeded the notification limit. As required by the Tank Characterization Plan, the appropriate notifications were made within 24 hours of official confirmation that the limit was exceeded. Secondary analyses have been initiated. Results from secondary analyses will be included in a revision to this report.

A rag was caught in both auger samples. The rag material was segregated in the hot cell. None of the chemists nor analysts reported seeing any rag fibers contaminating the samples.

SCOPE

This document serves as the 45-day report deliverable for the tank C-204 auger samples collected on May 2, 1995 (samples 95-AUG-22 and 95-AUG-023). Each sample was received, extruded, and analyzed by the 222-S Laboratories in accordance with the Tank Characterization Plan (TCP) referenced below. Included in this report are the primary safety screening results (DSC, TGA, and total alpha) and copies of all DSC and TGA raw data scans as requested in the TCP. Photographs of the auger samples were taken during extrusion and, although not included in this report, are available.

The results of secondary analyses will be included in a revision to this report. The secondary analyses being conducted are described below.

SAMPLE RECEIPT, EXTRUSION, AND SUBSAMPLING

95-AUG-022

Sample 95-AUG-022 was collected from riser 7 (east coordinate) of tank C-204 using a 20-inch auger sampler. The sample was taken on May 2, 1995 at 1030 hours. It was received into the 222-S Laboratories on May 3 and extruded on May 4. Upon extrusion, it was evident that a rag had been caught by the auger. Some tank waste material was retrieved as well. A gob of waste (4.3 g) on flute 8 of the auger was subsampled as upper half solids. The rag material intermixed with waste was on flutes 11 through 18. All other flutes were bare. A total of 158.5 grams of solid material was collected, with no drainable liquid. Of that amount, 104.3 grams were segregated as rag material, 53.8 grams were segregated as lower half solids, and 4.3 grams were subsampled as upper half solids. The tank waste solids appeared dark brown.

It is anticipated that the archive material for this auger (sample S95T000892) will be used up in secondary analyses. Subsamples are identified in Table 1.

95-AUG-023

Sample 95-AUG-023 was collected from riser 7 (west coordinate) of tank C-204 using a 20-inch auger sampler. The sample was taken on May 2, 1995 at 1135 hours. It was received into the 222-S Laboratories on May 3 and extruded on May 5. As with sample 95-AUG-022, a rag was caught in the auger. Rag and tank waste material were recovered from flutes 13 through 18 of the auger. All other flutes were bare. A total of 135.0 grams of solid material were collected, with no drainable liquid. Of that amount, 93.9 grams of material were segregated as rag material, and 41.1 grams were segregated as tank waste solids. The tank waste appeared to be a mixture of yellow and dark brown solids. Upon subsampling (and incidental mixing), the material appeared brown. The sample was analyzed on a whole segment basis, as no change in strata could be seen and recovery was low. The archive sample (sample S95T000982) from this auger is expected to be used up in secondary analyses. Subsamples are identified in Table 1.

Table 1. C-204 Subsample Identification

Sample ID	Sample Description	Analyses
S95T000876	95-AUG-022 extrusion	extrusion
S95T000877	95-AUG-023 extrusion	extrusion
S95T000878	95-AUG-022 upper half solids, direct analysis	DSC/TGA
S95T000879	95-AUG-022 upper half fusion	fusion/alpha
S95T000880	95-AUG-022 rag material	archive
S95T000881	95-AUG-022 lower half solids, direct analysis	DSC/TGA
S95T000882	95-AUG-022 lower half fusion	fusion/alpha
S95T000883	95-AUG-022 upper half auger subsample	subsampling
S95T000884	95-AUG-022 lower half auger subsample	subsampling
S95T000885	95-AUG-022 lower half archive	secondary analyses
S95T000888	95-AUG-023 rag material	archive
S95T000890	95-AUG-023 whole segment solids, direct analysis	DSC/TGA
S95T000891	95-AUG-023 whole segment fusion	fusion/alpha
S95T000892	95-AUG-023 whole segment archive	secondary analyses
S95T000893	95-AUG-023 whole segment auger subsample	subsampling

ANALYTICAL RESULTS

Analytical results are summarized in Tables 5 and 6, with the applicable notification limits shaded. For tests where more than one replicate was performed, the results are presented in a another table for clarity (e.g. Tables 2, 3, and 4). The summary tables (created electronically from the laboratory sample management program) only include sample and duplicate results.

DSC (Energetics Content)

DSC analyses were performed under a nitrogen atmosphere using procedure LA-514-113, Rev. B-1. Exotherms exceeding the notification limit of 481 J/g were detected for all three samples. Safety program personnel were consulted for direction in running secondary analyses. The secondary analyses being conducted are discussed below.

Three LMCS control standards were run along with these samples, exhibiting recoveries ranging from 103.7 to 107.9 percent, all within the program's specified accuracy control limits of 90 to 110 percent recovery.

Results for S95T000890. The sample and duplicate results for sample S95T000890 (from 95-AUG-023) were 952.1 and 665.7 J/g respectively (on a dry weight basis). The relative percent difference (RPD) between sample and duplicate results was 35.4%. As this result was not within the TCP target of 10%, a triplicate sample was analyzed, with a result of 822.9 J/g. The triplicate result is not included in the summary tables, but is shown in Table 2 below. The scans for the sample and triplicate results appear similar in shape. The mean of the three results is 813.6 with a standard deviation of 143.4. Several factors could have contributed to this variability - the small sample size used for the DSC (typically 15-35 milligrams), the high moisture content of these samples, or insufficient homogenization. Also, contamination of rag material is a possibility (all visible rag material was segregated in the hot cell; however, individual rag fibers could have remained. None of the chemists nor analysts reported seeing fibers contaminating these samples). The DSC results for sample S95T000890 are presented in Table 2 and Table 6.

Table 2. Summary of DSC Results for S95T000890

Sample	Result (J/g)	Duplicate	Triplicate	Mean	Std. Dev.
S95T000890	952.1	665.7	822.9	813.6	143.4

Results for S95T000878 and S95T000881. Reproducible results for samples S95T000878 and S95T000881 were not obtained. The exotherms continued through 500°C (a baseline was not re-established). A modification to the analysis was initiated to increase the temperature limit to 600°C. Even in this case, the exotherms continued without no clear baseline at the limit of the test. The standards which were run with these samples exhibited acceptable recovery

(within 10% of the accepted true value). The empirical observation is that this is a real event. Safety program personnel were consulted when these high exotherms were observed, resulting in a selection of a suite of secondary analyses (discussed below).

The DSC analyzer can only integrate between fixed points on the graph; therefore, since the scans did not return to baseline, these data can only be reported as minimum values. Both samples (S95T000878 and S95T000881) were run in triplicate. The largest exotherm on sample S95T000878 was >1234.0 J/g (dry basis) on the duplicate analysis. The largest exotherm on sample S95T000881 was >1149 J/g (dry basis) on the triplicate analysis. As the scans for these samples did not return to baseline, the RPDs calculated in Table 5 are not applicable. The sample mean and standard deviation were also not calculated for these samples because only "greater than" values were obtained.

The endotherms for these samples were also quite large, dominating the scans up as far as 300°C. In an attempt to isolate the exotherms, subsamples from S95T000878 and S95T000881 were preheated to approximately 240°C by TGA (temperature raised at a rate of 10°C per minute) to remove water from the samples. The subsamples were then analyzed by DSC. These runs, marked as "test," can only be considered unofficial results. The result for S95T000878 was >1977.1 J/g and for S95T000881 was >962.4 J/g. The DSC results for samples S95T000878 and S95T000881 are presented in Table 3.

Table 3. Summary of DSC Results for S95T000878 and S95T000881

Sample	Result	Duplicate	Triplicate	"Test"*	Mean	Std. Dev.
S95T000878	>445.6	>1234.0	>696.5	>1977.1*	n/a	n/a
S95T000881	>647.3	>76.1	>1149.0	>962.4*	n/a	n/a

*"test" results are unofficial and should only be used with caution.

TGA (Moisture Content)

Weight percent water is calculated from weight loss by TGA. These analyses were performed under a nitrogen atmosphere using procedure LA-560-112, Rev. A-2. Results for the three samples and their duplicates ranged in value from 50.44 to 59.92 percent water by weight. Results for sample S95T000878 exceeded the RPD target of 10%. A triplicate analysis was performed, resulting in a determination of 59.48 weight percent water, compared to 58.32% and 50.44% for the sample and duplicate. The mean of the three results for sample S95T000878 is 56.08, with a standard deviation of 4.92. The TGA results for sample S95T000878 are presented in Table 4.

All TGA results were well above the safety screening minimum of 17 weight percent. Three LMCS control standards were run with these analyses, exhibiting recoveries ranging from 99.76 to 100.7 percent, which were within the program's specified accuracy control limits of 90 to 110 percent.

Table 4. Summary of TGA Results for S95T000878

Sample	Result (wt% H2O)	Duplicate	Triplicate	Mean	Std. Dev.
S95T000878	58.32	50.44	59.48	56.08	4.92

Total Alpha Activity

Analyses for total alpha activity were performed on three samples. Samples were prepared by fusion using procedure LA-549-141, Rev. C-3, and analyses were performed using procedure LA-508-101, Rev. D-2. A sample duplicate was performed on each sample. Sample and duplicate results ranged from 0.00643 to 0.0519 μCi/g. The RPDs for samples S95T000879 and S95T000882 exceeded the TCP target of 10%. Since none of the results were more than ten times the detection limit, the variability is expected. As all results were below the safety screening limit of 41 μCi/g by a factor of approximately 800 or more, reruns were deemed unnecessary.

Two control standards were run, with recoveries of 105.7 and 90.5%, both within the TCP target of 90 to 110%. A spike was performed on sample S95T000879, with a recovery of 61.9%. This is outside of the TCP target recovery of 90 to 110%. Spike recoveries for alpha have typically been below the target criterion. The laboratory is proposing several minor changes to the methodology for this test to improve recovery in some cases. Since the sample results were far below the action limit, the poor spike recovery did not necessitate further testing (this method is for screening purposes - highly accurate results are not required far below the limit).

Secondary Analyses

Planning for secondary analyses was initiated once the exotherms exceeding the DSC criterion were observed. The strategy for secondary analyses was coordinated closely with safety program personnel. Conservation of sample was critical as only small archive samples remained after primary analyses. Two subsamples were submitted for Total Organic Carbon (TOC) determination per the TCP. These results will quantify the amount of organic material in the tank. The cyanide analyses were waived as the history of the tank did not include transfers of ferrocyanide streams. One remaining archive sample will be prepared for adiabatic calorimetry (by a method termed Reactive System Screening Tool). This method is called for as a secondary analysis in the TCP. The RSST result will provide a better understanding of the potential for propagating chemical reactions than the DSC. The final archive sample will be prepared for shipment to PNL for organic speciation. This will identify the organics present in the sample causing the high exotherm, as well as provide useful data for waste aging studies.

This will consume all remaining tank waste samples from tank C-204 (the segregated rag material will be retained for a period of time in the hot cell). Results of secondary analyses will be included in a revision to this report.

Responsible Project Coordinator: J. M. Conner

REFERENCE Schreiber, R. D., 1995, WHC-SD-WM-TP-307, Revision 0, "*Tank 241-C-204 Tank Characterization Plan*, dated March 6, 1995.

SAMPLE DATA SUMMARY

Summary Tables - Preliminary Safety Screening Results
C-204

CORE NUMBER: n/a
SEGMENT #: 95-AUG-022

TABLE 5

SEGMENT PORTION: U Upper Half of Segment

Sample#	R	A#	Analyte	Unit	Action Limits Lower	Action Limits Upper	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S95T000878			% Water by TGA using Mettler	%	17.000	110.000	100.3	n/a	58.32	50.44	54.38	14.5	n/a	n/a	n/a
S95T000878			DSC Exotherm Dry Calculated	Joules/g Dry	-999.000	481.010	n/a	n/a	> 445.6	>1234.0	n/a	n/a	n/a	1.00e-04	n/a
S95T000878			DSC Exotherm using Mettler	Joules/g	-999.000	481.010	107.9	n/a	>195.7	>542.0	n/a	n/a	n/a	n/a	n/a
S95T000879		F	Alpha of Digested Solid	uCi/g	-999.000	41.010	90.54	<2.81e-03	6.43e-03	1.45e-2	1.05e-02	77.1	61.90	7.00e-03	73.8

L Lower Half of Segment: L Lower Half of Segment

Sample#	R	A#	Analyte	Unit	Action Limits Lower	Action Limits Upper	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S95T000881			% Water by TGA using Mettler	%	17.000	110.000	100.3	n/a	55.02	56.39	55.70	2.46	n/a	n/a	n/a
S95T000881			DSC Exotherm Dry Calculated	Joules/g Dry	-999.000	481.010	n/a	n/a	> 647.3	>76.1	n/a	n/a	n/a	1.00e-04	n/a
S95T000881			DSC Exotherm using Mettler	Joules/g	-999.000	481.010	107.9	n/a	>286.7	>33.4	n/a	n/a	n/a	n/a	n/a
S95T000882		F	Alpha of Digested Solid	uCi/g	-999.000	41.010	90.54	<2.81e-03	2.34e-02	1.21e-2	1.78e-02	63.7	n/a	7.00e-03	33.3

=> Limit violated
=> Selected Limit

Summary Tables - Preliminary Safety Screening Results
C-204

CORE NUMBER: n/a
SEGMENT #: 95-AUG-023

TABLE 6

SEGMENT PORTION: W Whole Segment

Sample#	R	A#	Analyte	Unit	Action Limits Lower	Action Limits Upper	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S95T000890			% Water by TGA using Mettler	%	17.000	110.000	99.76	n/a	59.92	56.08	58.00	6.62	n/a	n/a	n/a
S95T000890			DSC Exotherm Dry Calculated	Joules/g Dry	-999.000	481.010	n/a	n/a	952.1	665.7	808.9	35.4	n/a	1.00e-04	n/a
S95T000890			DSC Exotherm using Mettler	Joules/g	-999.000	481.010	107.2	n/a	399.9	279.6	339.8	35.4	n/a	n/a	n/a
S95T000891	F		Alpha of Digested Solid	uCi/g	-999.000	41.010	105.7	1.40e-02	5.11e-02	5.19e-2	5.15e-02	1.55	n/a	7.00e-03	17.6

=> Limit violated
=> Selected Limit

SAMPLE ANALYSES RESULTS

LABCORE Data Entry Template for Worklist# 1378

Analyst: SMF **Instrument:** DSC0 1 **Book #** 12N14-A

Method: LA-514-113 Rev/Mod B-1

Worklist Comment: Please run C-204 DSC under N2. bdv

GROUP	PROJECT	S	TYPE	SAMPLE#	R	A	TEST	MATRIX	ACTUAL	FOUND	DL	UNIT
		1	STD				DSC-01	SOLID	28.45	30.7	N/A	Joules/g
95000069	C-204	2	SAMPLE	S95T000878	0		DSC-01	SOLID	N/A	>195.7		Joules/g
95000069	C-204	3	DUP	S95T000878	0		DSC-01	SOLID	>195.7	>542.0	N/A	Joules/g
95000069	C-204	4	TRIPL	S95T000878	0		DSC-01	SOLID	>195.7	>305.9	N/A	Joules/g
		5	STD				DSC-01	SOLID	28.45	29.5	N/A	Joules/g
95000069	C-204	6	SAMPLE	S95T000881	0		DSC-01	SOLID	N/A	>286.7		Joules/g
95000069	C-204	7	DUP	S95T000881	0		DSC-01	SOLID	>286.7	>33.4	N/A	Joules/g
95000069	C-204	8	TRIPL	S95T000881	0		DSC-01	SOLID	>286.7	>508.8	N/A	Joules/g

Final page for worklist # 1378

See attached for Signatures 5/18/95
Analyst Signature **Date**

BDV
Verified by Blandina Valenzuela 5/22/95

Analyst Signature 5-18-95 **Date**

The exotherm values reported are a not the total energy produced from the reaction, the thermogram never returned back to the baseline. Therefore, the results should be considered greater than the reported values.

Data Entry Comments: S95T000878 produced one endotherm of 551.4 J/g at 106.8°C.
S95T000881 produced one endotherm of 484.4 J/g at 134.6°C

Units shown for QC (SPK & STD) may not reflect the actual units. DL = Detection Limit, S = Worklist Slot Number, R = Replicate Number, A = Aliquot Code.

LABCORE Data Entry Template for Worklist# 1378

Analyst: SMF **Instrument:** DSC0 **Book #** 12N14-1

Method: LA-514-113 Rev/Mod B-1

Worklist Comment: Please run C-204 DSC under N2. bdv

GROUP	PROJECT	S	TYPE	SAMPLE#	R	A	TEST	MATRIX	ACTUAL	FOUND	DL	UNIT
		1	STD				DSC-01	SOLID			N/A	Joules/g
95000069	C-204	2	SAMPLE	S95T000878	0		DSC-01	SOLID	N/A			Joules/g
95000069	C-204	3	DUP	S95T000878	0		DSC-01	SOLID			N/A	Joules/g
95000069	C-204	4	SAMPLE	S95T000881	0		DSC-01	SOLID	N/A			Joules/g
95000069	C-204	5	DUP	S95T000881	0		DSC-01	SOLID			N/A	Joules/g

Final page for worklist # 1378

SMFulton 5-17-95
Analyst Signature **Date**

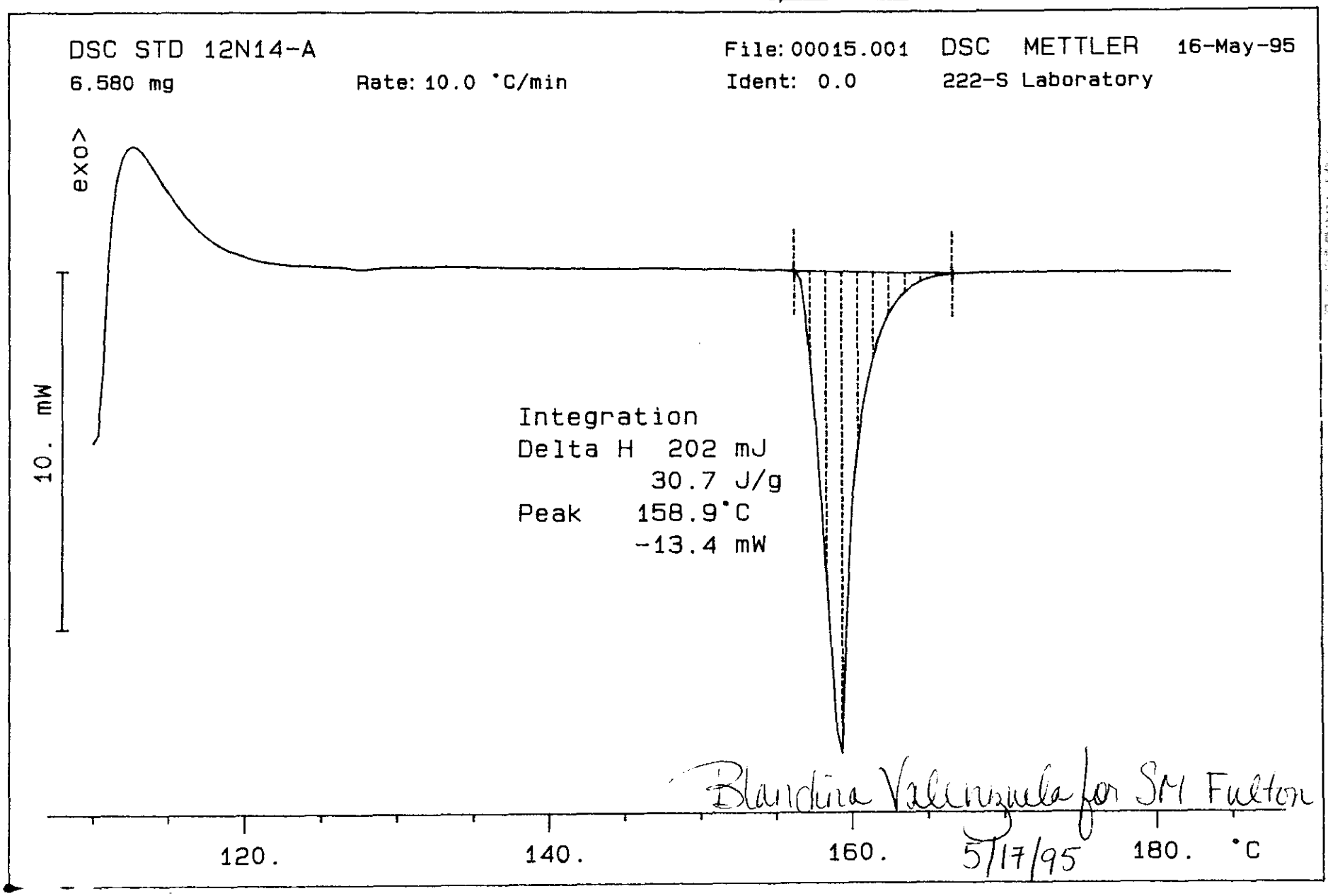
Analyst Signature **Date**

A triplicate was run on both samples.
5/18/95
BDV

Data Entry Comments:

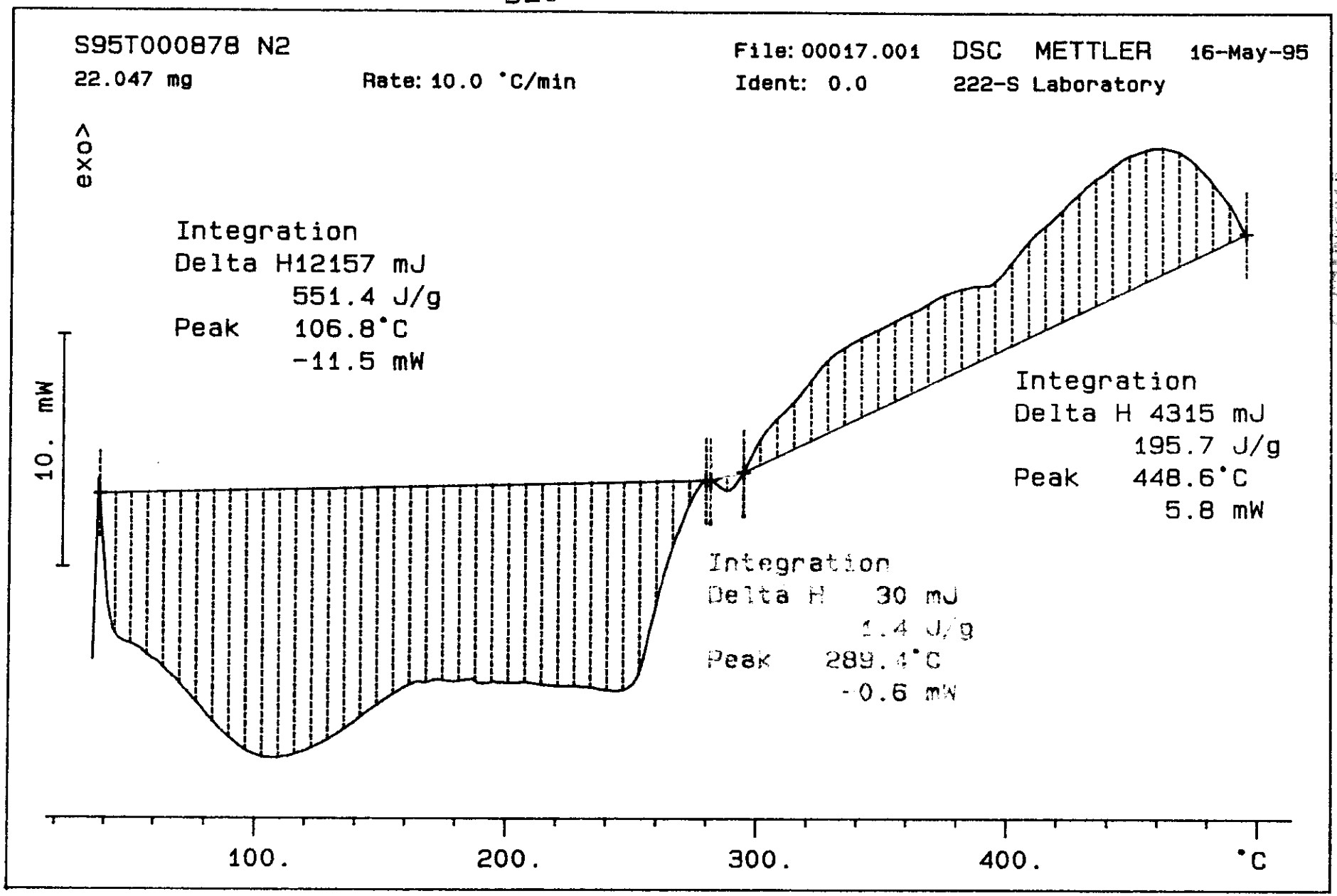
Units shown for QC (SPK & STD) may not reflect the actual units. DL = Detection Limit, S = Worklist Slot Number, R = Replicate Number, A = Aliquot Code.

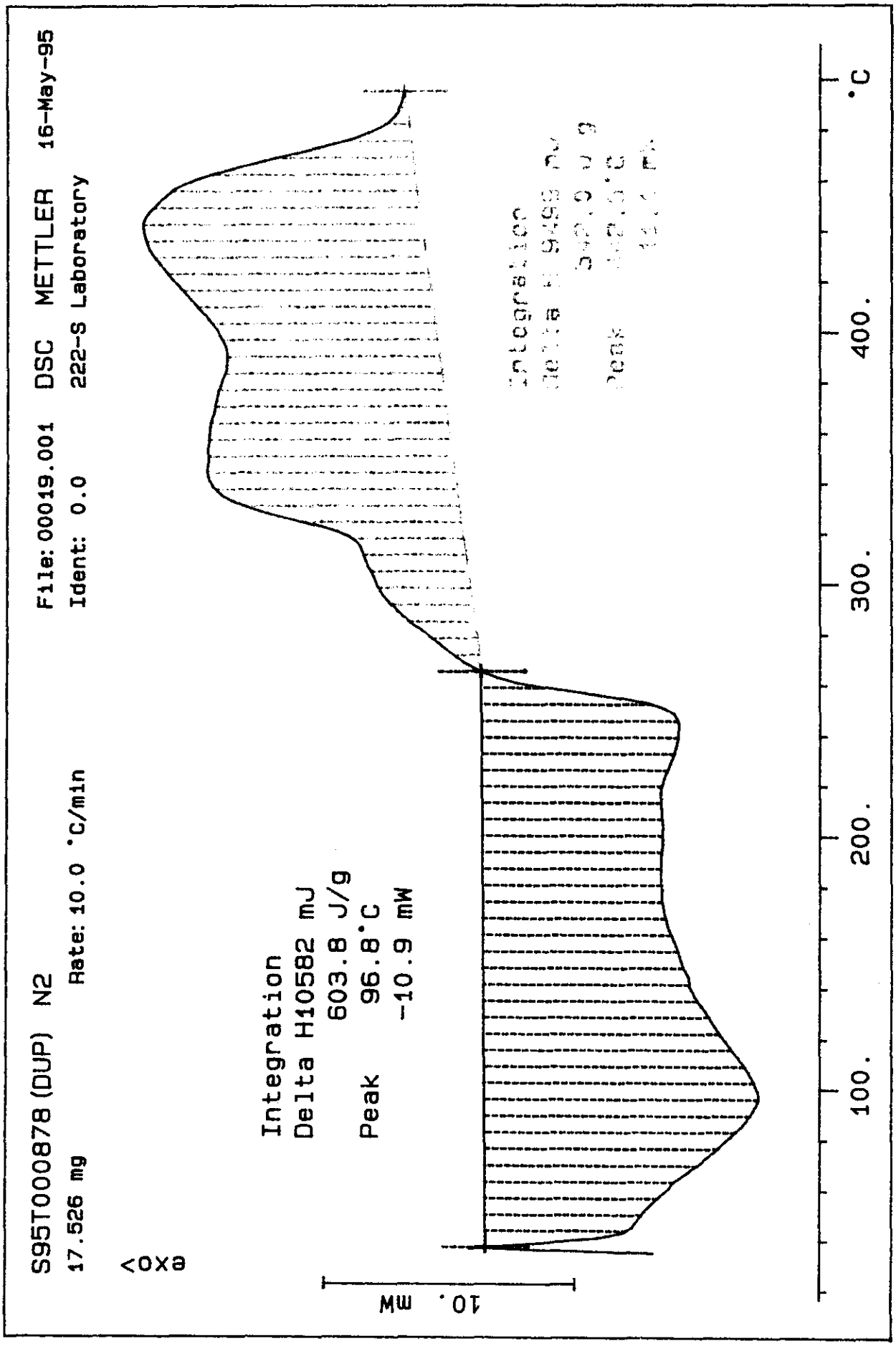
SIGNATURE BELOW REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 11 TO 18.

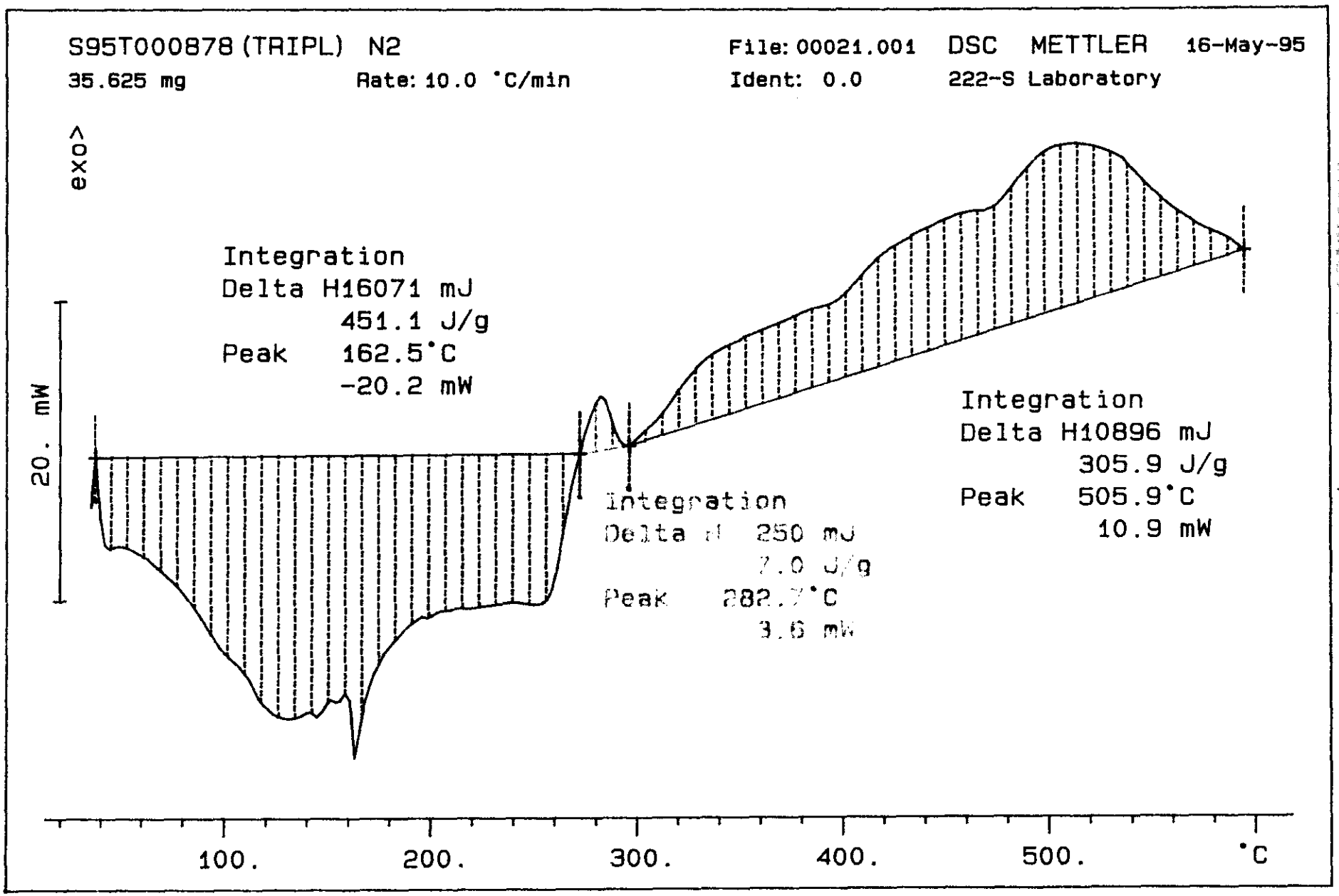


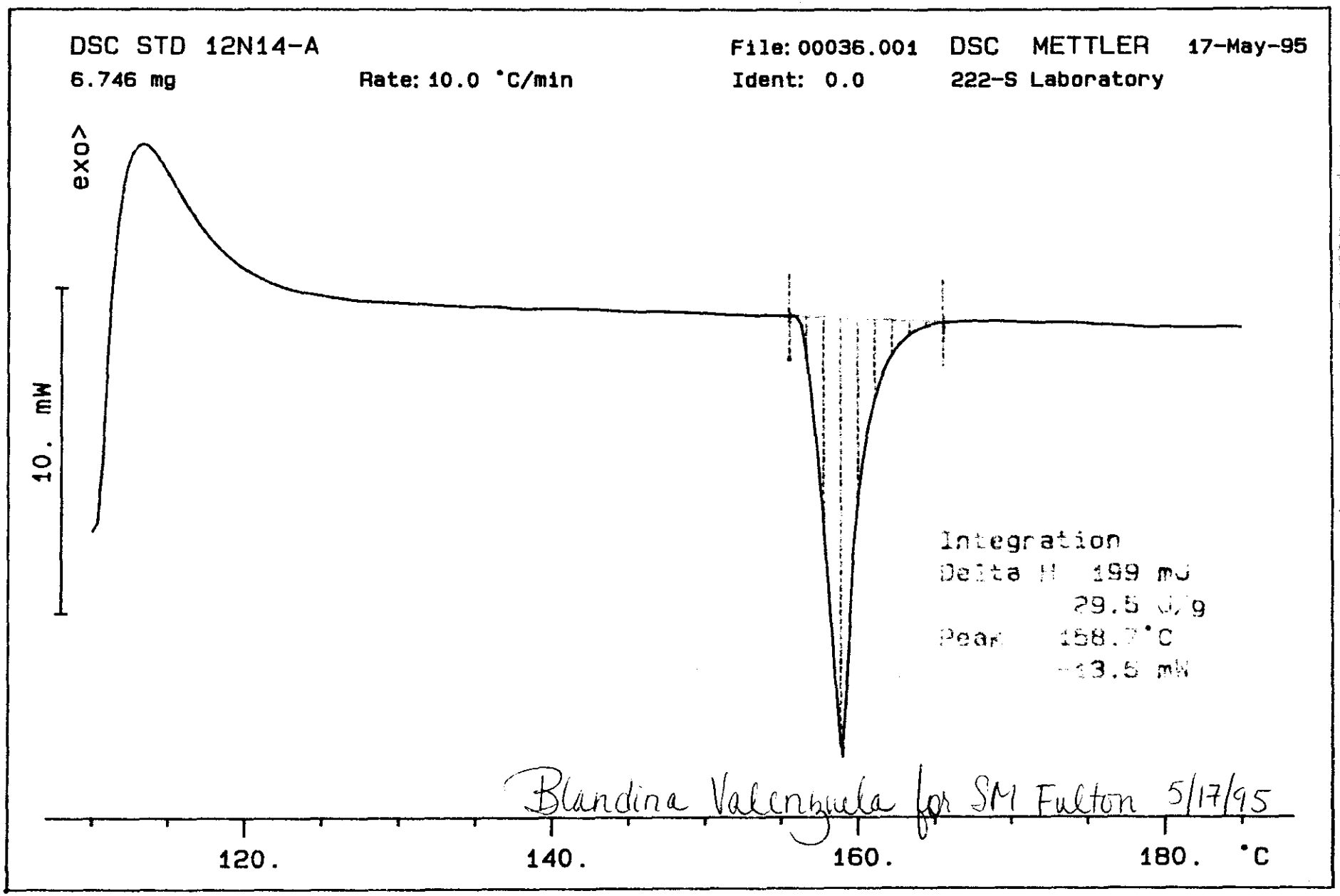
Blandina Valenzuela for SM Fulton 5/17/95

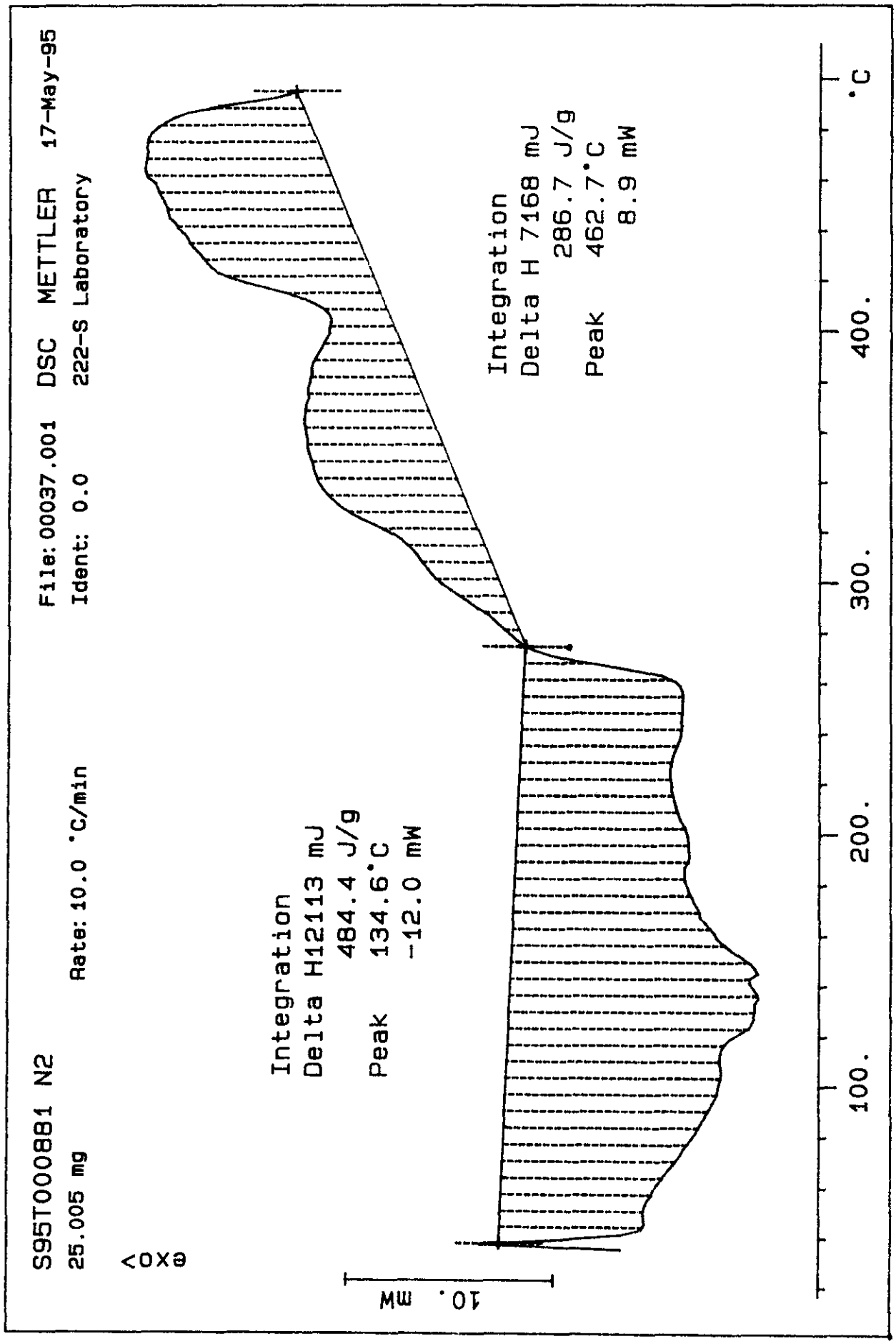
11

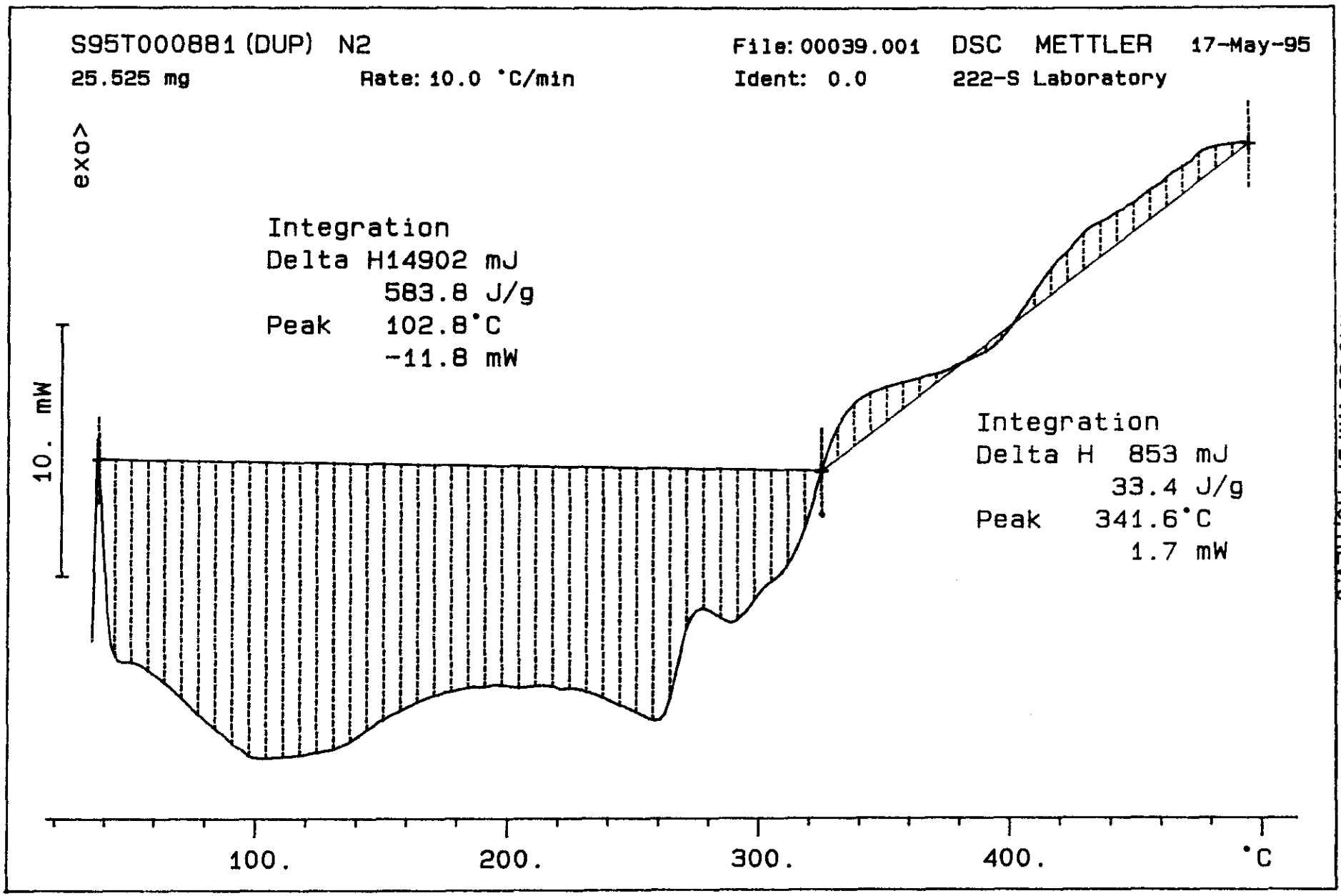


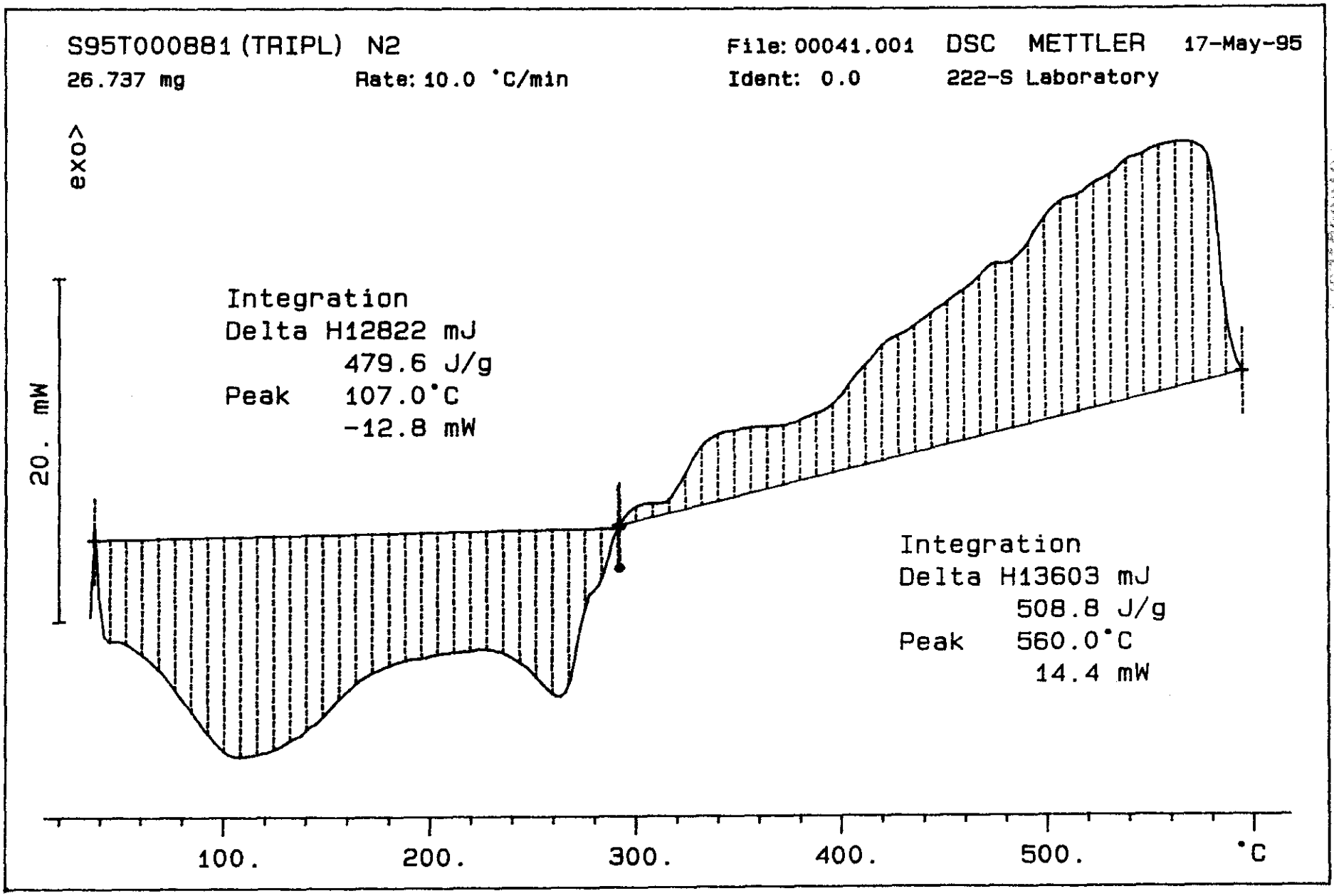












LABCORE Data Entry Template for Worklist# 1379

Analyst: SMF **Instrument:** DSC0 1 **Book #** 12N14-A

Method: LA-514-113 Rev/Mod B-1

Worklist Comment: Please run C-204 DSC under N2. bdv

GROUP	PROJECT	S	TYPE	SAMPLE#	R	A	TEST	MATRIX	ACTUAL	FOUND	DL	UNIT
		1	STD				DSC-01	SOLID	28.45	30.5	N/A	Joules/g
95000069	C-204	2	SAMPLE	S95T000890	0		DSC-01	SOLID	N/A	399.9		Joules/g
95000069	C-204	3	DUP	S95T000890	0		DSC-01	SOLID	399.9	279.6	N/A	Joules/g
95000069	C-204	4	TRIPL	S95T000890	0		DSC-01	SOLID	399.9	345.6	N/A	Joules/g

Final page for worklist # 1379

See attached for signatures 5/11/95
Analyst Signature **Date** BDV

Analyst Signature 5-12-95 **Date**

Verified 5/12/95 James M. Fayfe

Data Entry Comments: Sample produced one endotherm at 132.6°C with a delta H of 422.2 J/g. Sample looked like stiff dark chocolate frosting.

Units shown for QC (SPK & STD) may not reflect the actual units. DL = Detection Limit, S = Worklist Slot Number, R = Replicate Number, A = Aliquot Code.

LABCORE Data Entry Template for Worklist# 1379

Analyst: SMF **Instrument:** DSC0 _____ **Book #** 12N14-17

Method: LA-514-113 Rev/Mod B-1

Worklist Comment: Please run C-204 DSC under N2. bdv

GROUP	PROJECT	S	TYPE	SAMPLE#	R	A	-------TEST------	MATRIX	ACTUAL	FOUND	DL	UNIT
		1	STD				DSC-01	SOLID	_____	_____	N/A	Joules/g
95000069	C-204	2	SAMPLE	S95T000890	0		DSC-01	SOLID	N/A	_____	_____	Joules/g
95000069	C-204	3	DUP	S95T000890	0		DSC-01	SOLID	_____	_____	N/A	Joules/g

Final page for worklist # 1379

S M Fulton 5-10-95
Analyst Signature **Date**

_____
Analyst Signature **Date**

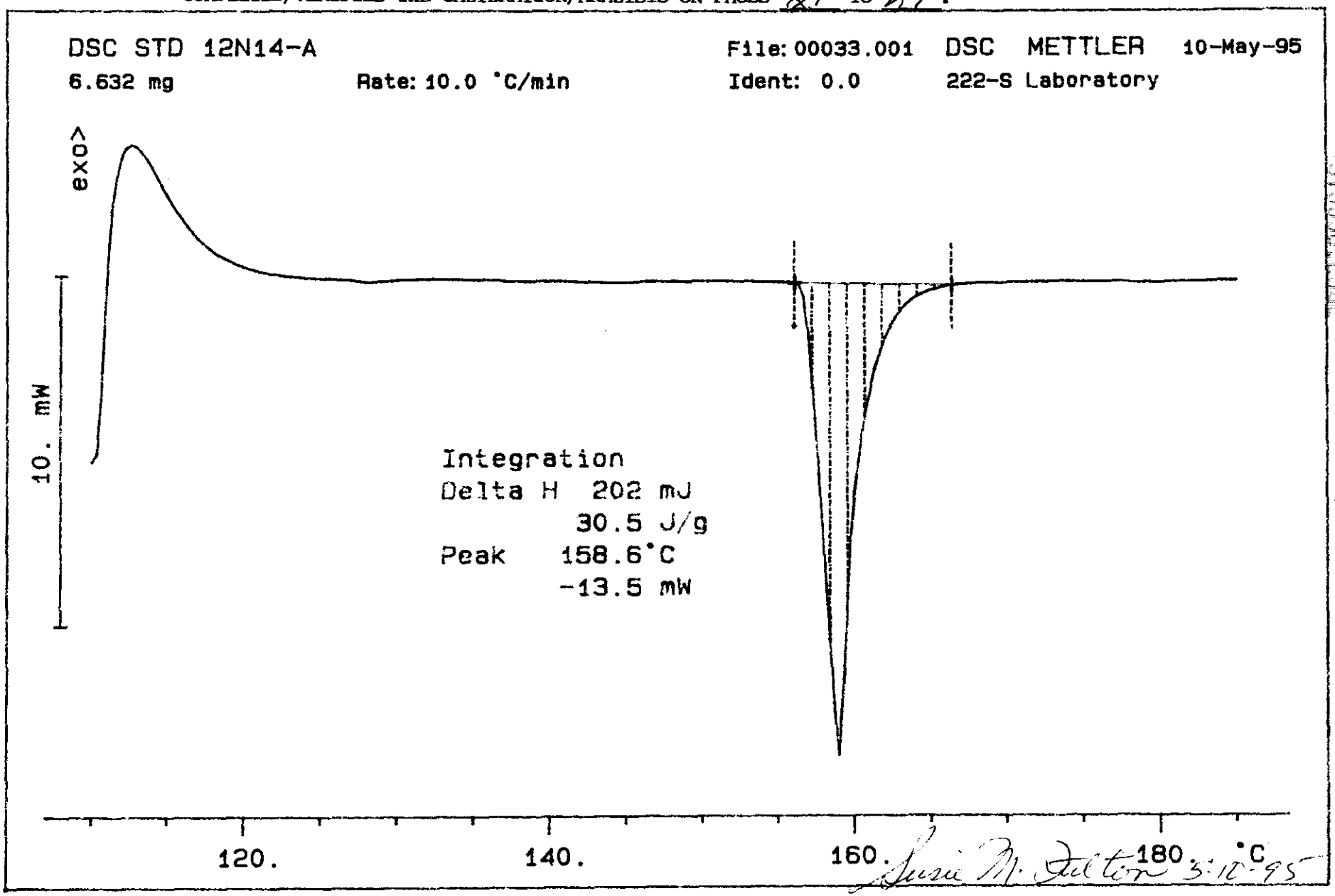
Triplicate was run. 5/11/95 BDV

Data Entry Comments:

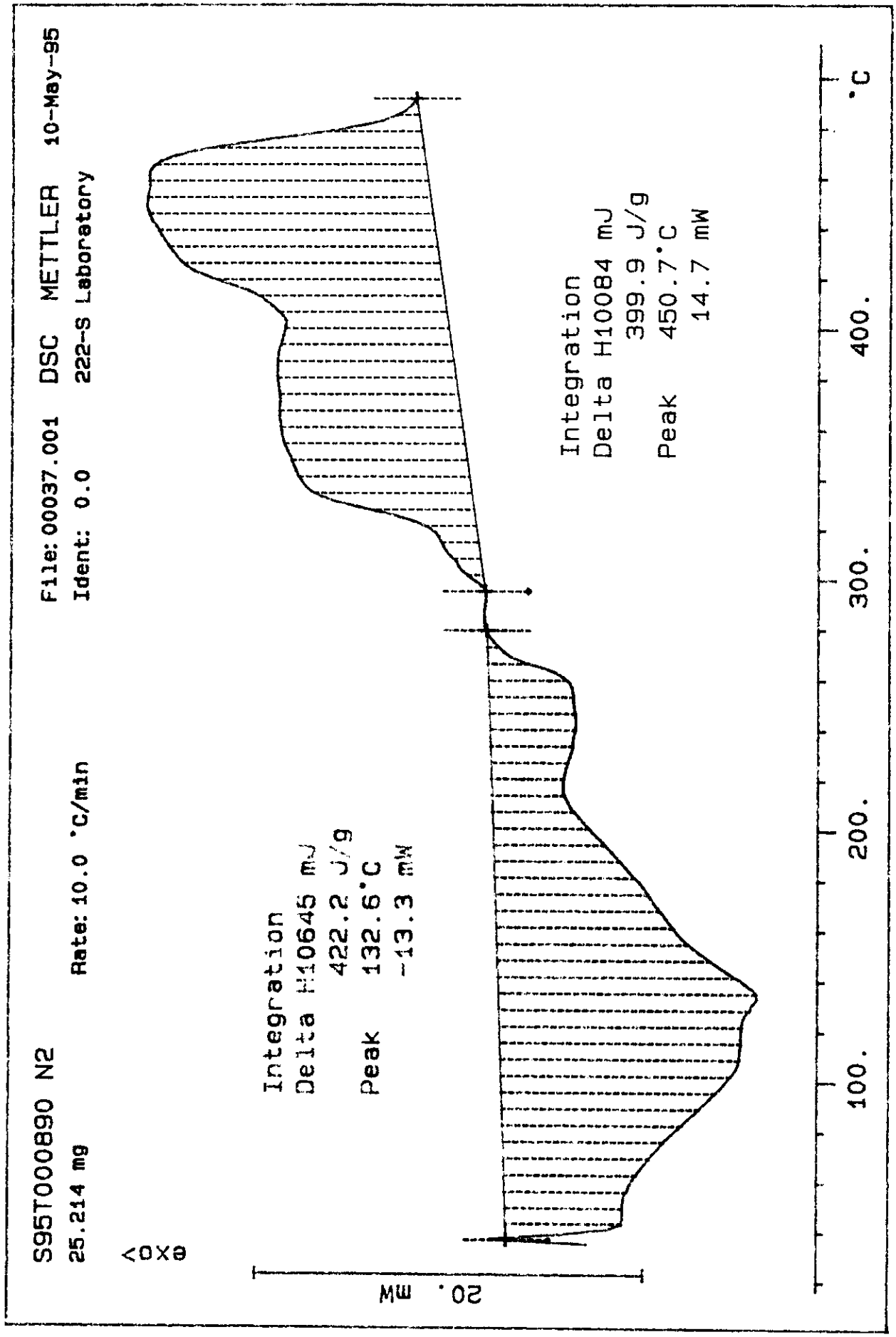
sample is like stiff dark chocolate frosting.

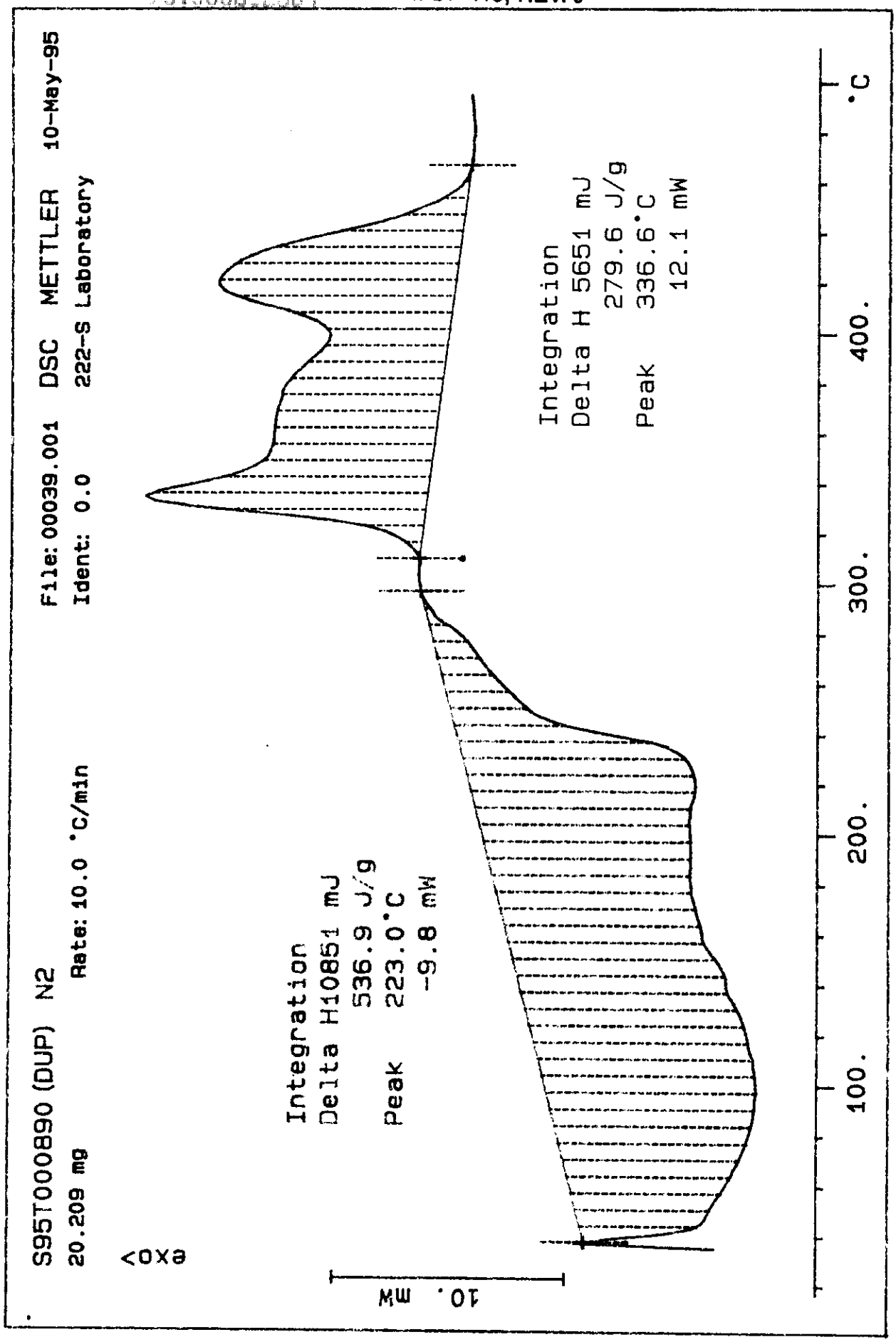
Units shown for QC (SPK & STD) may not reflect the actual units. DL = Detection Limit, S = Worklist Slot Number, R = Replicate Number, A = Aliquot Code.

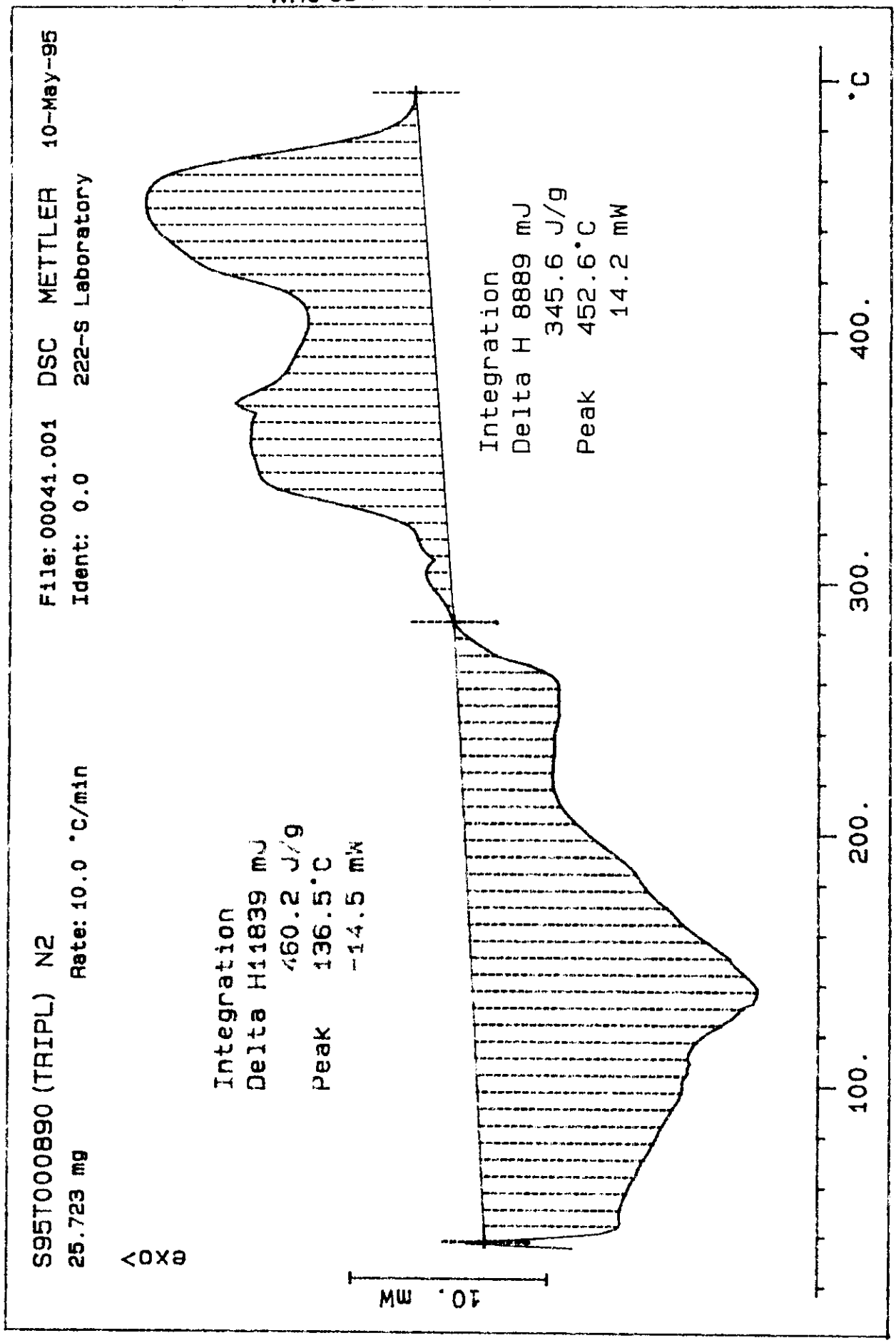
SIGNATURE BELOW REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 21 TO 24.



Susie M. Sutton 3-10-95


S95T000890 N2
25.214 mg
Rate: 10.0 °C/min
File: 00037.001 DSC METTLER 10-May-95
Ident: 0.0 222-S Laboratory
Integration
Delta H10645 mJ
422.2 J/g
Peak 132.6°C
-13.3 mW
Integration
Delta H10084 mJ
399.9 J/g
Peak 450.7°C
14.7 mW
exo>
20. mW
100.
200.
300.
400.
°C


S95T000890 (DUP) N2
20.209 mg
Rate: 10.0 °C/min
File: 0039.001 DSC METTLER 10-May-95
Ident: 0.0 222-S Laboratory
exo>
10. mW
Integration
Delta H10851 mJ
536.9 J/g
Peak 223.0°C
-9.8 mW
Integration
Delta H 5651 mJ
279.6 J/g
Peak 336.6°C
12.1 mW
100.
200.
300.
400.
°C


S95T000890 (TRIPL) N2
25.723 mg
Rate: 10.0 °C/min
File: 00041.001 DSC METTLER 10-May-95
Ident: 0.0 222-S Laboratory
Integration
Delta H 8889 mJ
345.6 J/g
Peak 452.6°C
14.2 mW
Integration
Delta H1839 mJ
460.2 J/g
Peak 136.5°C
-14.5 mW
exo>
10. mW
100.
200.
300.
400.
°C

LABCORE Data Entry Template for Worklist# 1431

Analyst: BDV **Instrument:** DSC0 2 **Book #** —

Method: LA-514-113 Rev/Mod —

Worklist Comment: Calculated dry DSC for C-204. bdv

GROUP	PROJECT	S	TYPE	SAMPLE#	R	A	TEST	MATRIX	ACTUAL	FOUND	DL	UNIT
95000069	C-204	1	SAMPLE	S95T000878	0		DSC-02	SOLID	N/A	>445.6		Joules/g Dry
95000069	C-204	2	DUP	S95T000878	0		DSC-02	SOLID	>445.6	>1234 C	N/A	Joules/g Dry
95000069	C-204	3	TRIPL	S95T000878	0		DSC-02	SOLID	>445.6	>696.5	N/A	Joules/g Dry
95000069	C-204	4	SAMPLE	S95T000881	0		DSC-02	SOLID	N/A	>647.3		Joules/g Dry
95000069	C-204	5	DUP	S95T000881	0		DSC-02	SOLID	>647.3	>76.1	N/A	Joules/g Dry
95000069	C-204	6	TRIPL	S95T000881	0		DSC-02	SOLID	>647.3	>1149.0	N/A	Joules/g Dry
95000069	C-204	7	SAMPLE	S95T000890	0		DSC-02	SOLID	N/A	952.1		Joules/g Dry
95000069	C-204	8	DUP	S95T000890	0		DSC-02	SOLID	952.1	665.7	N/A	Joules/g Dry
95000069	C-204	9	TRIPL	S95T000890	0		DSC-02	SOLID	952.1	822.9	N/A	Joules/g Dry

Data entered + verified by **Final page for worklist # 1431**

Blandina Valenzuela 5/22/95

Analyst Signature **Date**

Analyst Signature **Date**

Data Entry Comments:

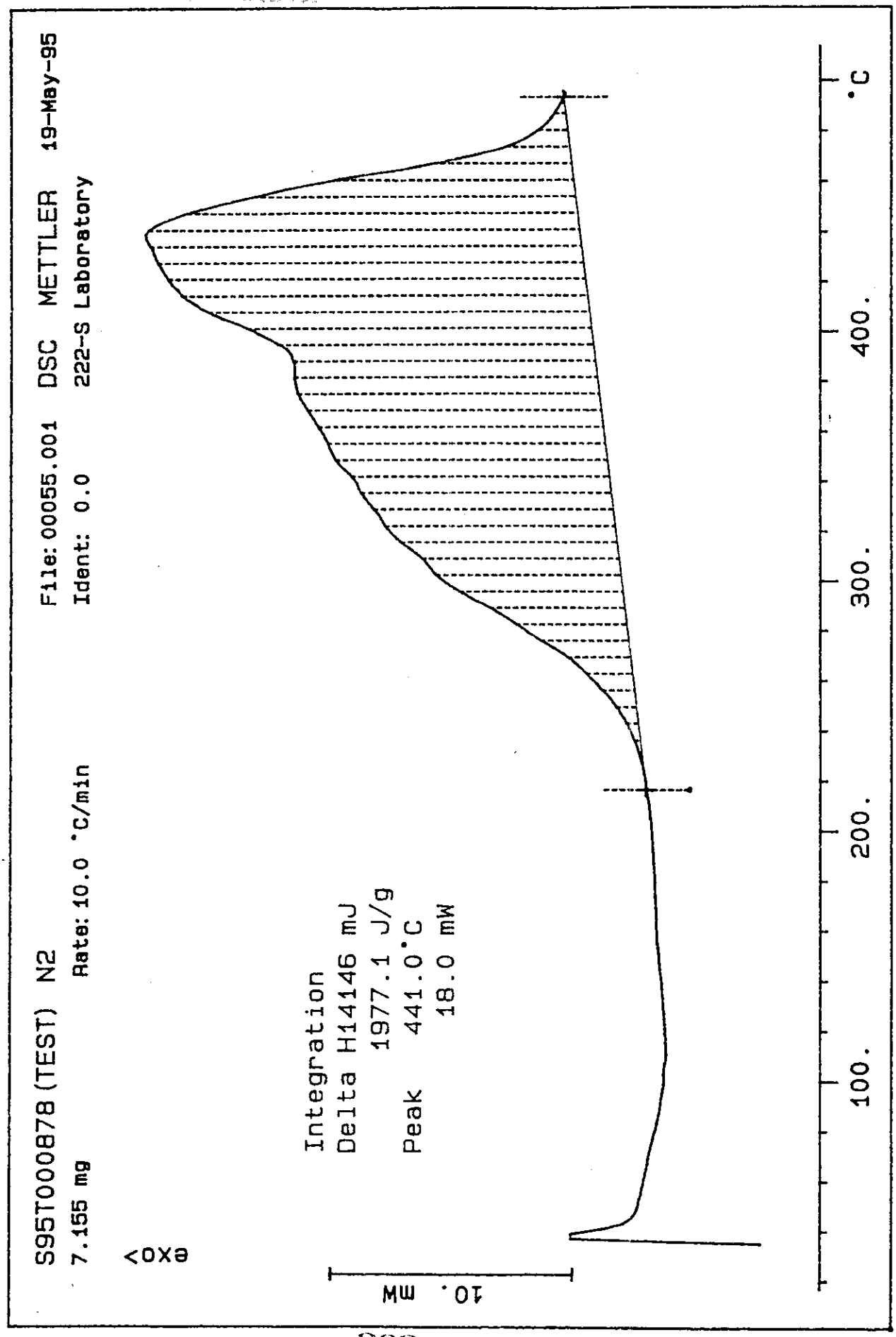
Units shown for QC (SPK & STD) may not reflect the actual units. DL = Detection Limit, S = Worklist Slot Number, R = Replicate Number, A = Aliquot Code.

C-204

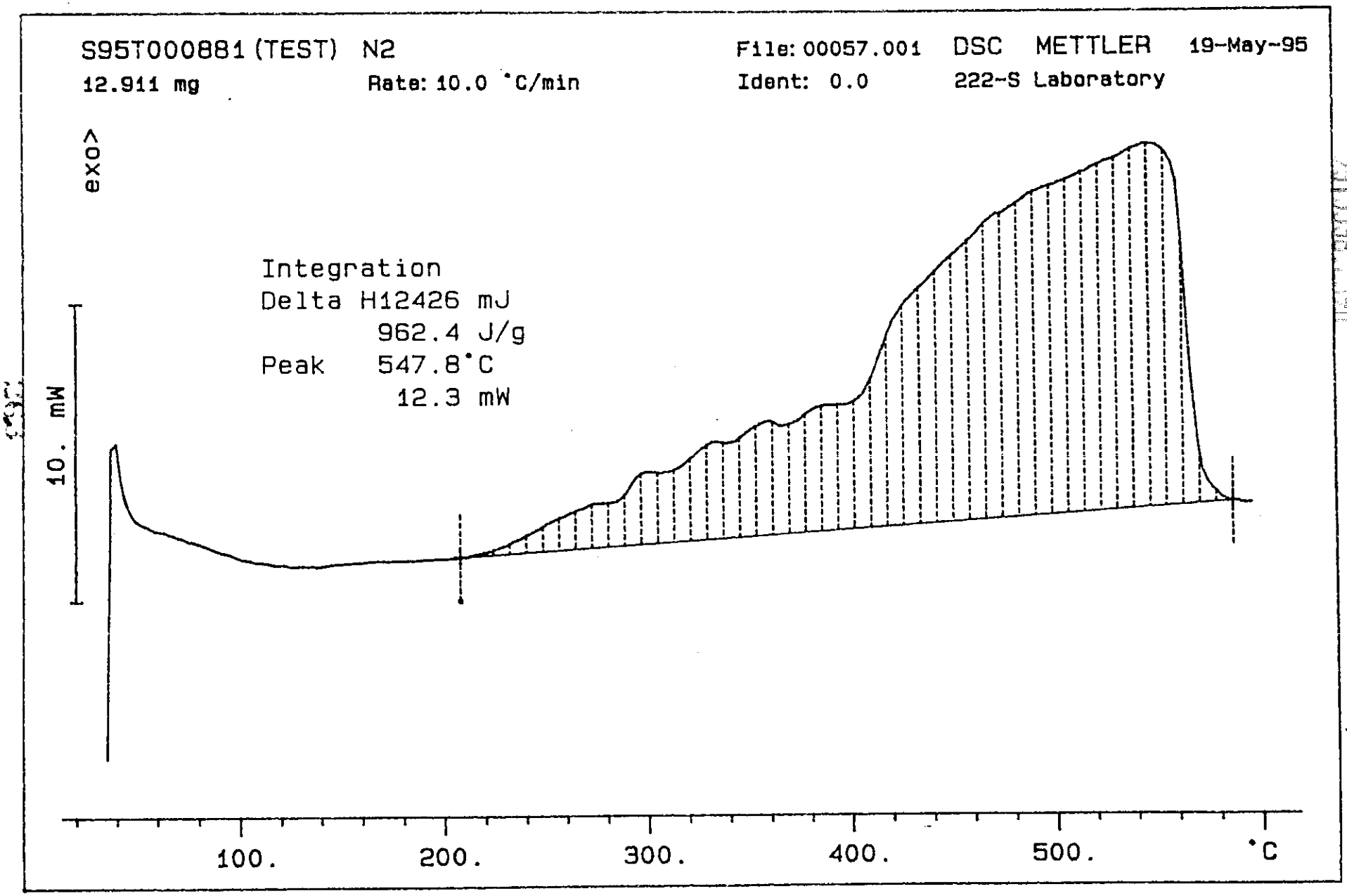
CALCULATED DRY DSC			
SAMPLE NO.	DSC RESULT (J/g)	TGA RESULT (% water)	DRY DSC RESULT
S95T000878	>195.7	56.08	445.6
878D	>542.0	56.08	1234.0
878T	>305.9	56.08	696.5
881	>286.7	55.71	647.3
881D	>334	55.71	76.1
881T	>508.8	55.71	1149.0
890	399.9	58.00	952.1
890D	279.6	58.00	665.7
890T	345.6	58.00	822.9

The following DSC runs were performed in an attempt to better understand the exothermic characteristics of the C-204 samples. The samples were pre-dried before being run on the DSC. **These are unofficial results**. These test runs are described in the narrative.

Sample S95T000878	TEST
Sample S95T000881	TEST


S95T000878 (TEST) N2
7.155 mg
Rate: 10.0 °C/min
File: 00055.001 DSC METTLER 19-May-95
Ident: 0.0 222-S Laboratory
exo>
Integration
Delta H14146 mJ
1977.1 J/g
Peak 441.0°C
18.0 mW
10. mW
100.
200.
300.
400.
°C

COPY



LABCORE Data Entry Template for Worklist# 1374

Analyst: SMF **Instrument:** TGA0 | **Book #** 42N8-A

Method: LA-560-112 Rev/Mod A-2

Worklist Comment: Please run C-204 TGA under N2. bdv

GROUP	PROJECT	S	TYPE	SAMPLE#	R	A	TEST	MATRIX	ACTUAL	FOUND	DL	UNIT
		1	STD				TGA-01	SOLID	59.19	59.39	N/A	%
95000069	C-204	2	SAMPLE	S95T000878	0		TGA-01	SOLID	N/A	58.32		%
95000069	C-204	3	DUP	S95T000878	0		TGA-01	SOLID	5/22/95 BDV 58.32 ~~50.44~~	50.44	N/A	%
95000069	C-204	4	TRIPL	S95T000878	0		TGA-01	SOLID	58.32	59.48	N/A	%
		5	STD				TGA-01	SOLID	59.19	58.77	N/A	%
95000069	C-204	6	SAMPLE	S95T000881	0		TGA-01	SOLID	N/A	55.02		%
95000069	C-204	7	DUP	S95T000881	0		TGA-01	SOLID	55.02	56.39	N/A	%

Final page for worklist # 1374

See attached for signatures
Analyst Signature **Date**

5-17-95
Analyst Signature **Date**

Verified by Blandina Valenzuela 5/22/95

Data Entry Comments:

Units shown for QC (SPK & STD) may not reflect the actual units. DL = Detection Limit, S = Worklist Slot Number, R = Replicate Number, A = Aliquot Code.

LABCORE Data Entry Template for Worklist# 1374

Analyst: SMF **Instrument:** TGA0 _____ **Book #** 412N8-A

Method: LA-560-112 Rev/Mod A-2

Worklist Comment: Please run C-204 TGA under N2. bdv

GROUP	PROJECT	S	TYPE	SAMPLE#	R	A	-------TEST------	MATRIX	ACTUAL	FOUND	DL	UNIT
		1	STD				TGA-01	SOLID			N/A	%
95000069	C-204	2	SAMPLE	S95T000878	0		TGA-01	SOLID	N/A			%
95000069	C-204	3	DUP	S95T000878	0		TGA-01	SOLID			N/A	%
95000069	C-204	4	SAMPLE	S95T000881	0		TGA-01	SOLID	N/A			%
95000069	C-204	5	DUP	S95T000881	0		TGA-01	SOLID			N/A	%

Final page for worklist # 1374

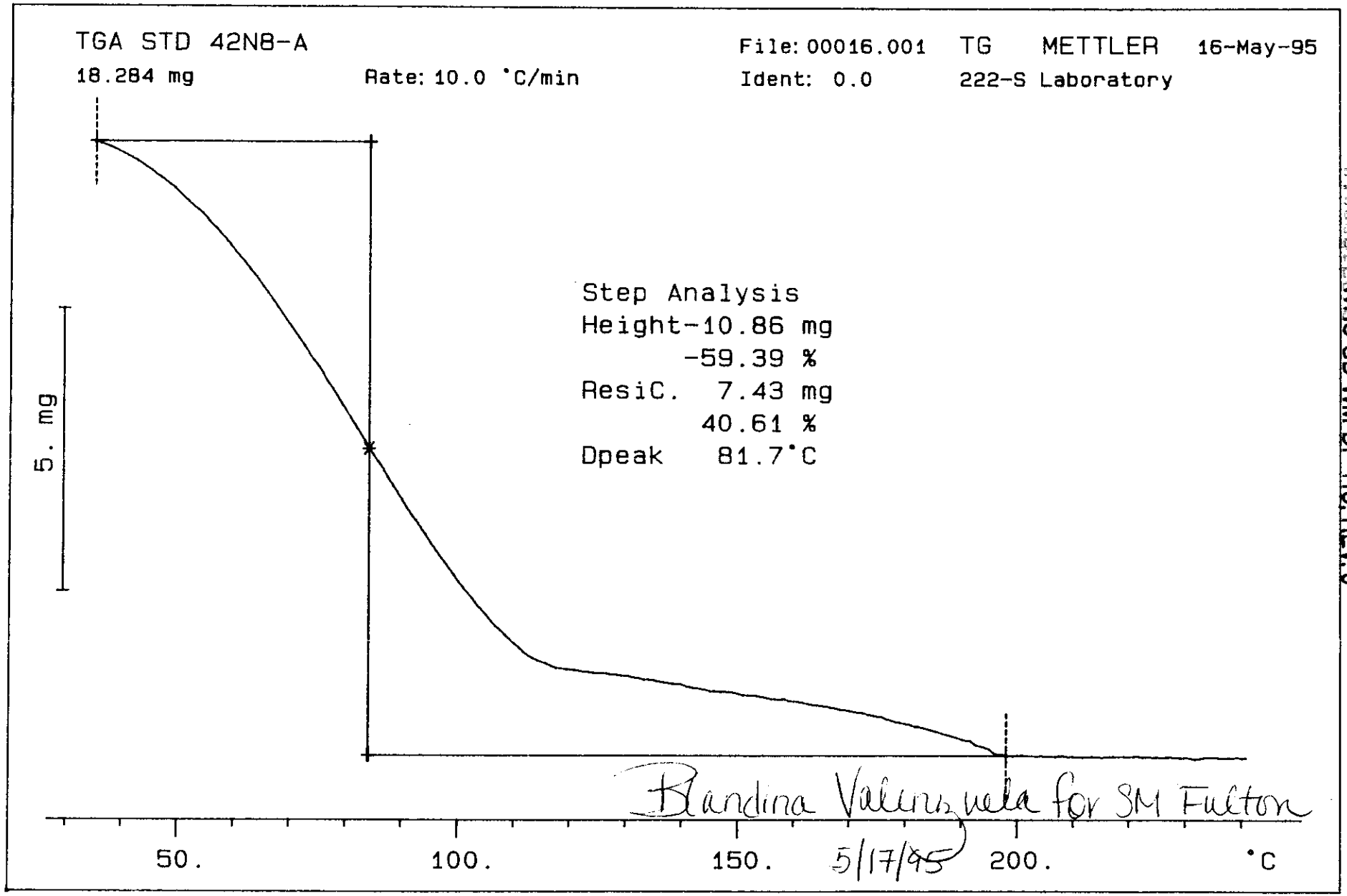
Sm fulton 5-17-95
Analyst Signature **Date**

_____
Analyst Signature **Date**

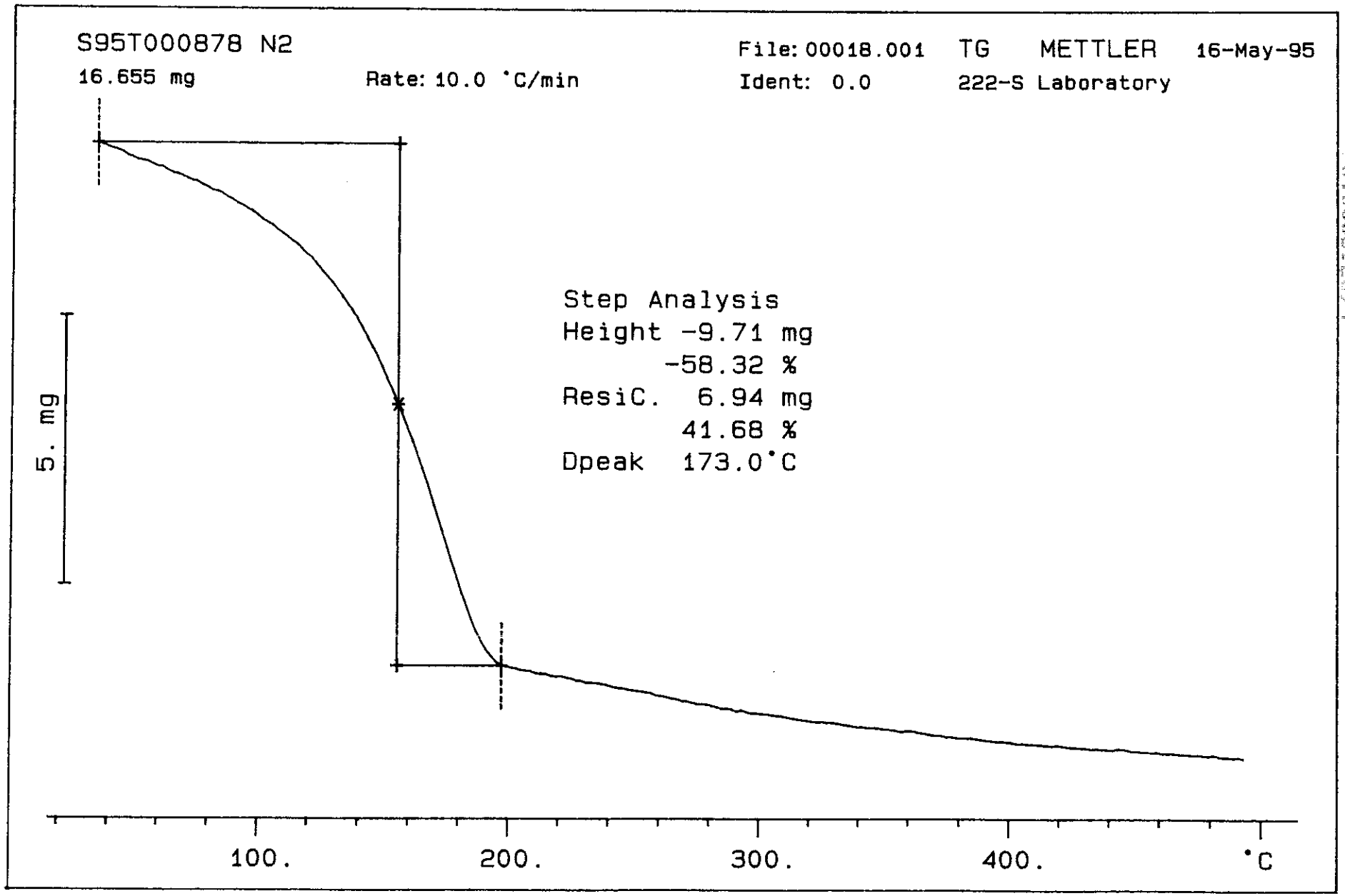
Data Entry Comments:

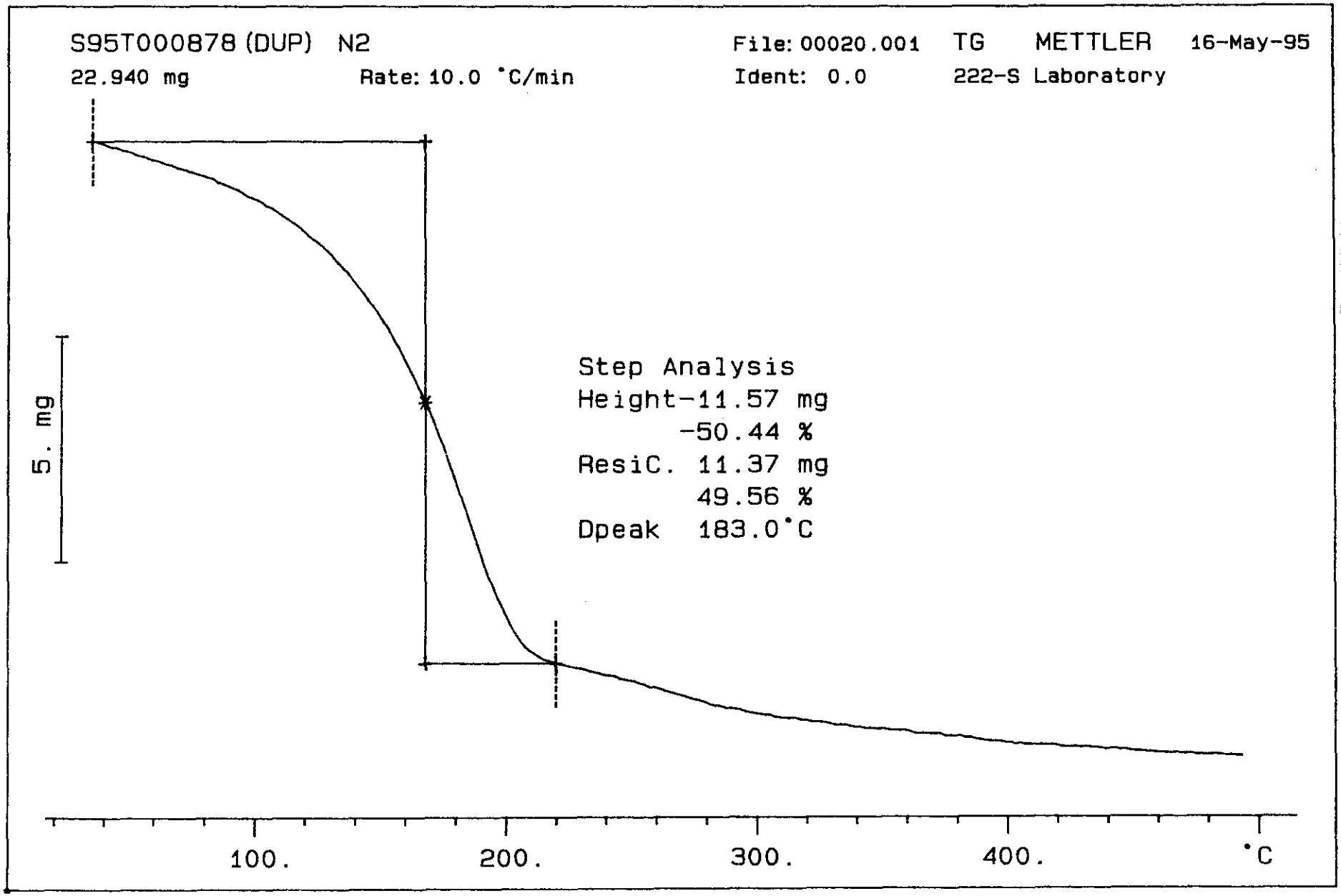
Units shown for QC (SPK & STD) may not reflect the actual units. DL = Detection Limit, S = Worklist Slot Number, R = Replicate Number, A = Aliquot Code.

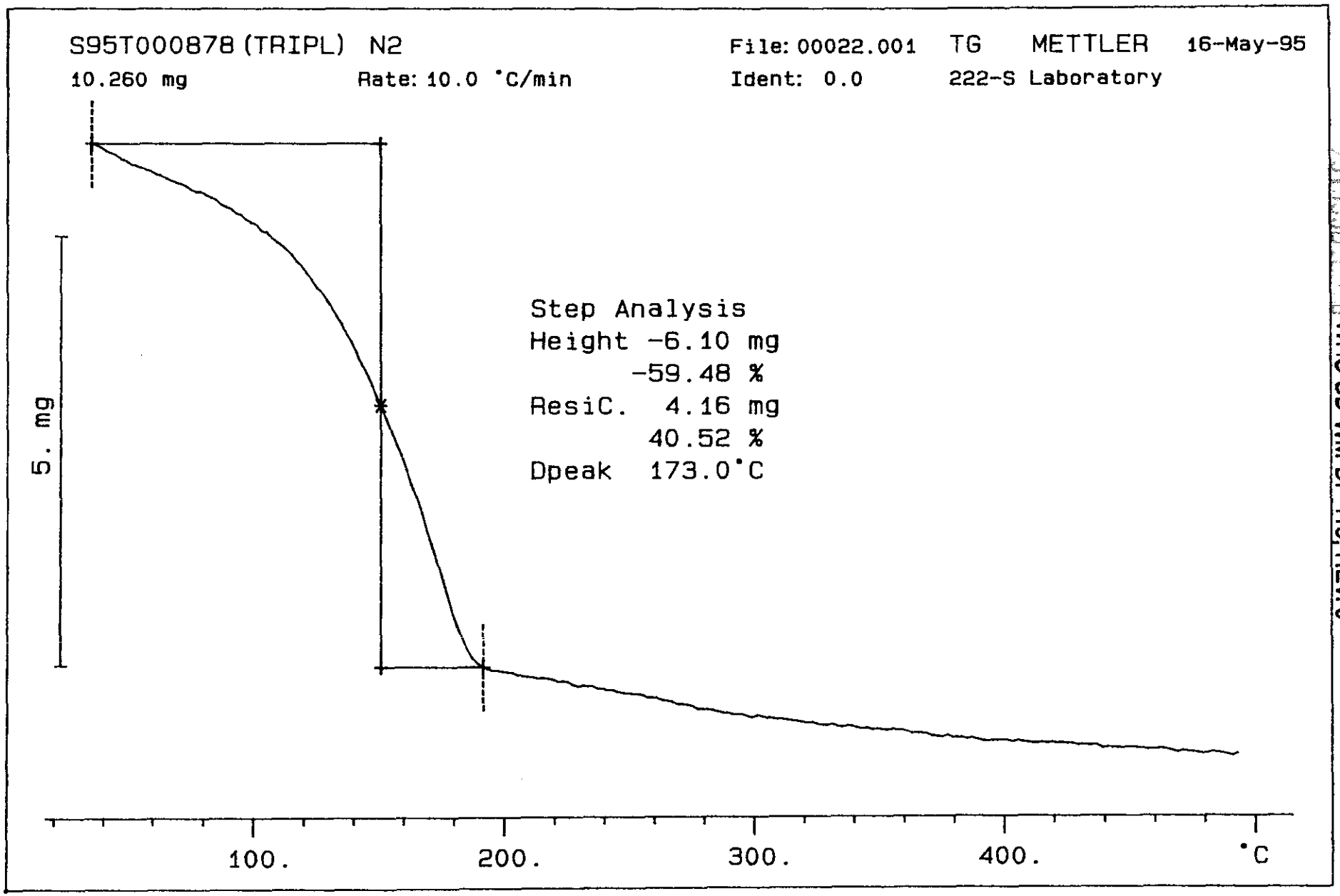
SIGNATURE BELOW REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 29 TO 35.

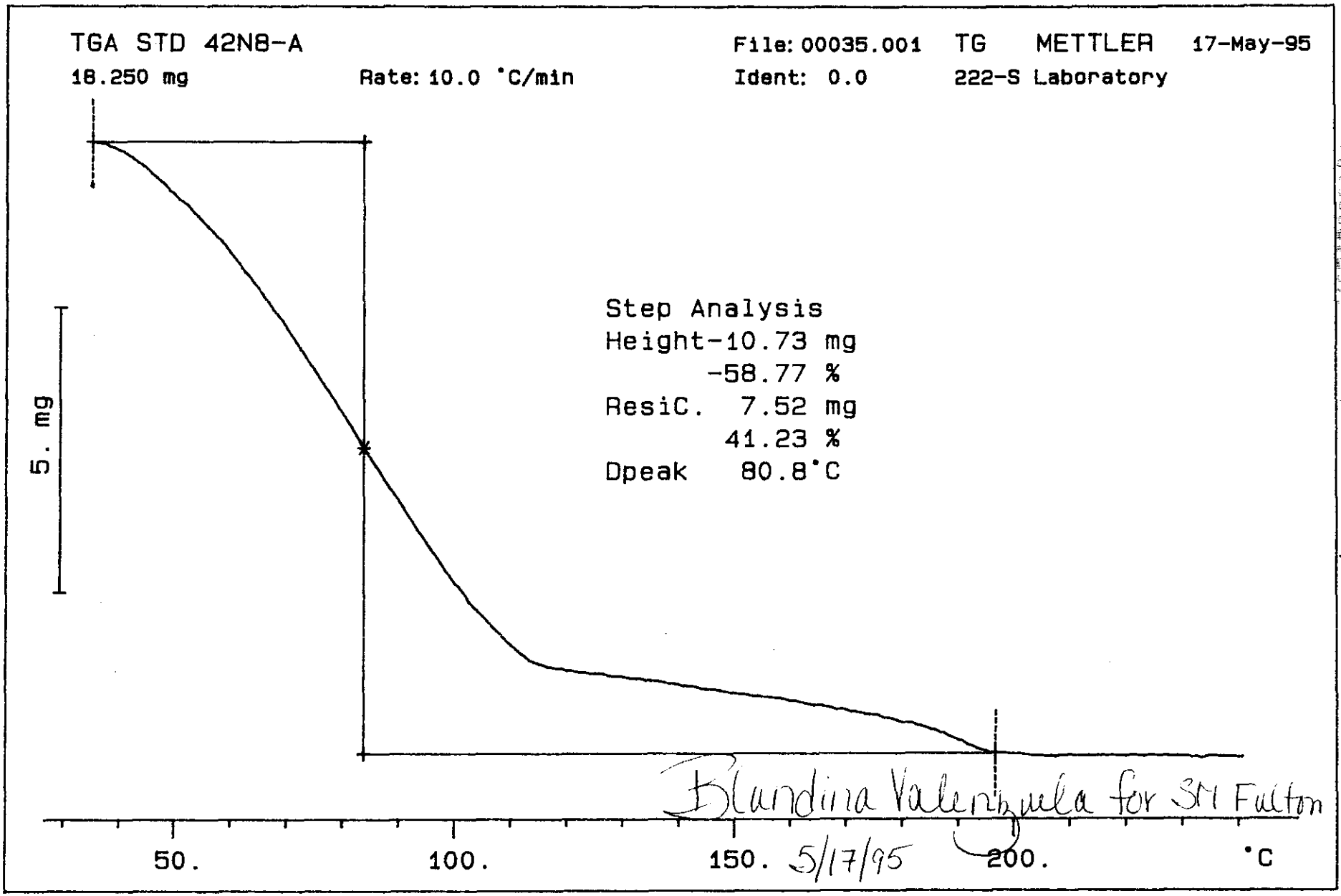


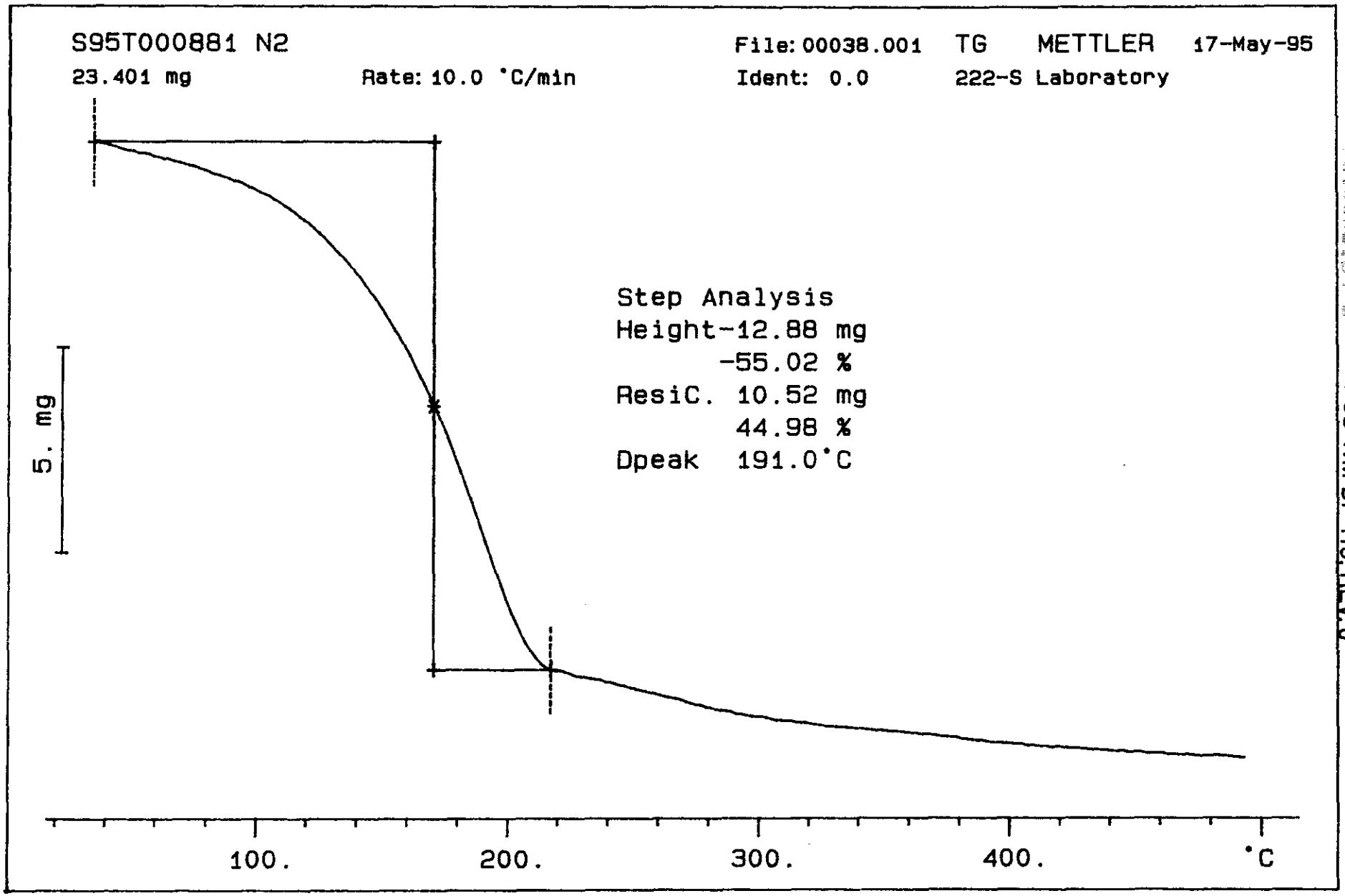
Blandina Valenzuela for SM Fulton 5/17/95

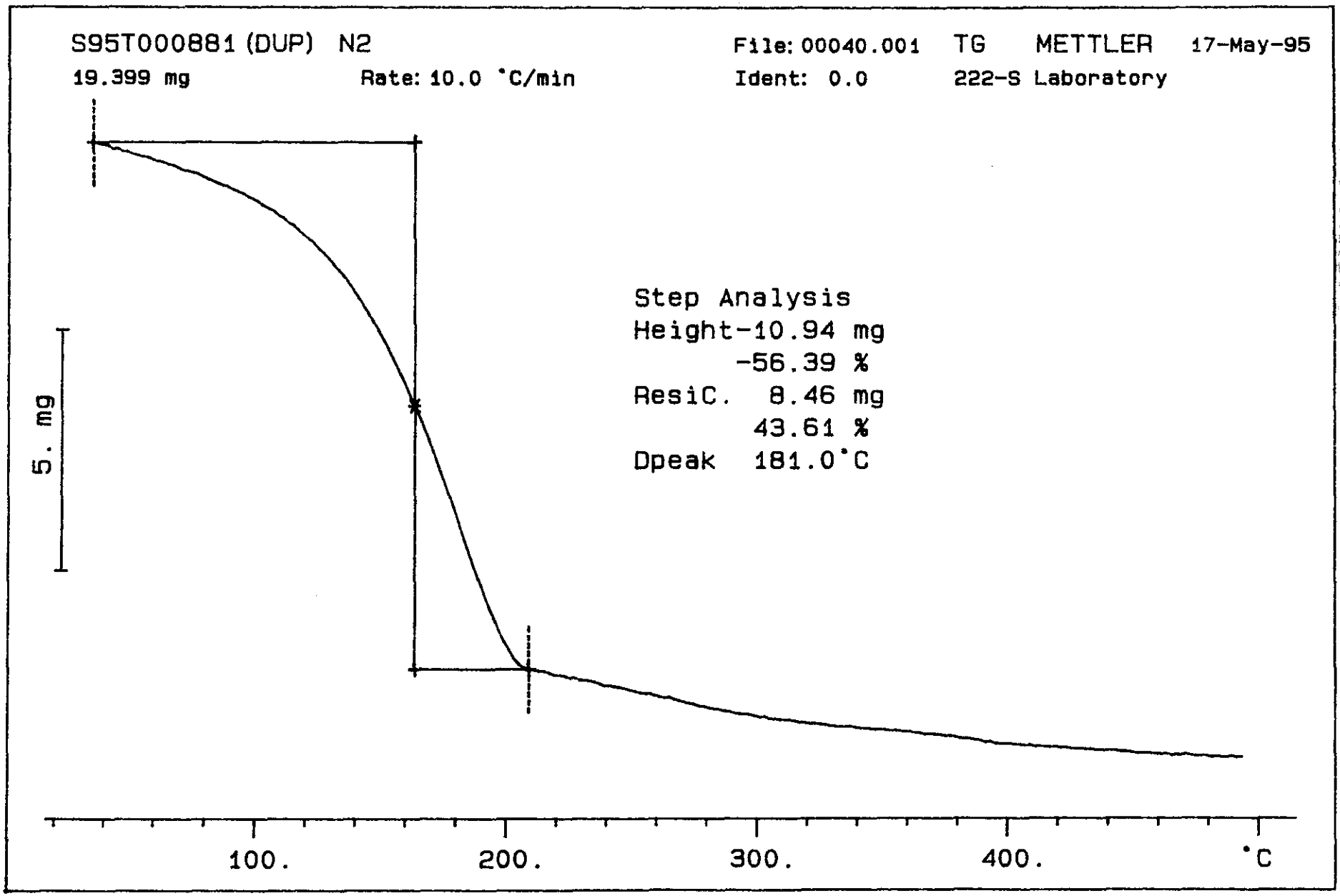





S95T000878 (TRIPL) N2
10.260 mg
Rate: 10.0 °C/min
File: 00022.001
Ident: 0.0
TG METTLER 16-May-95
222-S Laboratory
Step Analysis
Height -6.10 mg
-59.48 %
ResiC. 4.16 mg
40.52 %
Dpeak 173.0°C
5. mg
100.
200.
300.
400.
°C


TGA STD 42N8-A
18.250 mg
Rate: 10.0 °C/min
File: 00035.001
Ident: 0.0
TG METTLER 17-May-95
222-S Laboratory
Step Analysis
Height -10.73 mg
-58.77 %
ResiC. 7.52 mg
41.23 %
Dpeak 80.8°C
5 mg
50.
100.
150.
200.
°C
Blandina Valenzuela for SM Fulton
5/17/95





LABCORE Data Entry Template for Worklist# 1375

Analyst: SMF **Instrument:** TGA0 1 **Book #** 42N8-A

Method: LA-560-112 Rev/Mod A-2

Worklist Comment: Please run C-204 TGA under N2. bdv

GROUP	PROJECT	S	TYPE	SAMPLE#	R	A	-------TEST------	MATRIX	ACTUAL	FOUND	DL	UNIT
		1	STD				TGA-01	SOLID	59.19	~~59.04~~ 59.05	5/11/95 BDV N/A	%
95000069	C-204	2	SAMPLE	S95T000890	0		TGA-01	SOLID	N/A	59.92		%
95000069	C-204	3	DUP	S95T000890	0		TGA-01	SOLID	59.92	56.08	N/A	%

Final page for worklist # 1375

[signature] 5-10-95
Analyst Signature **Date**

[signature] 5-12-95
Analyst Signature **Date**

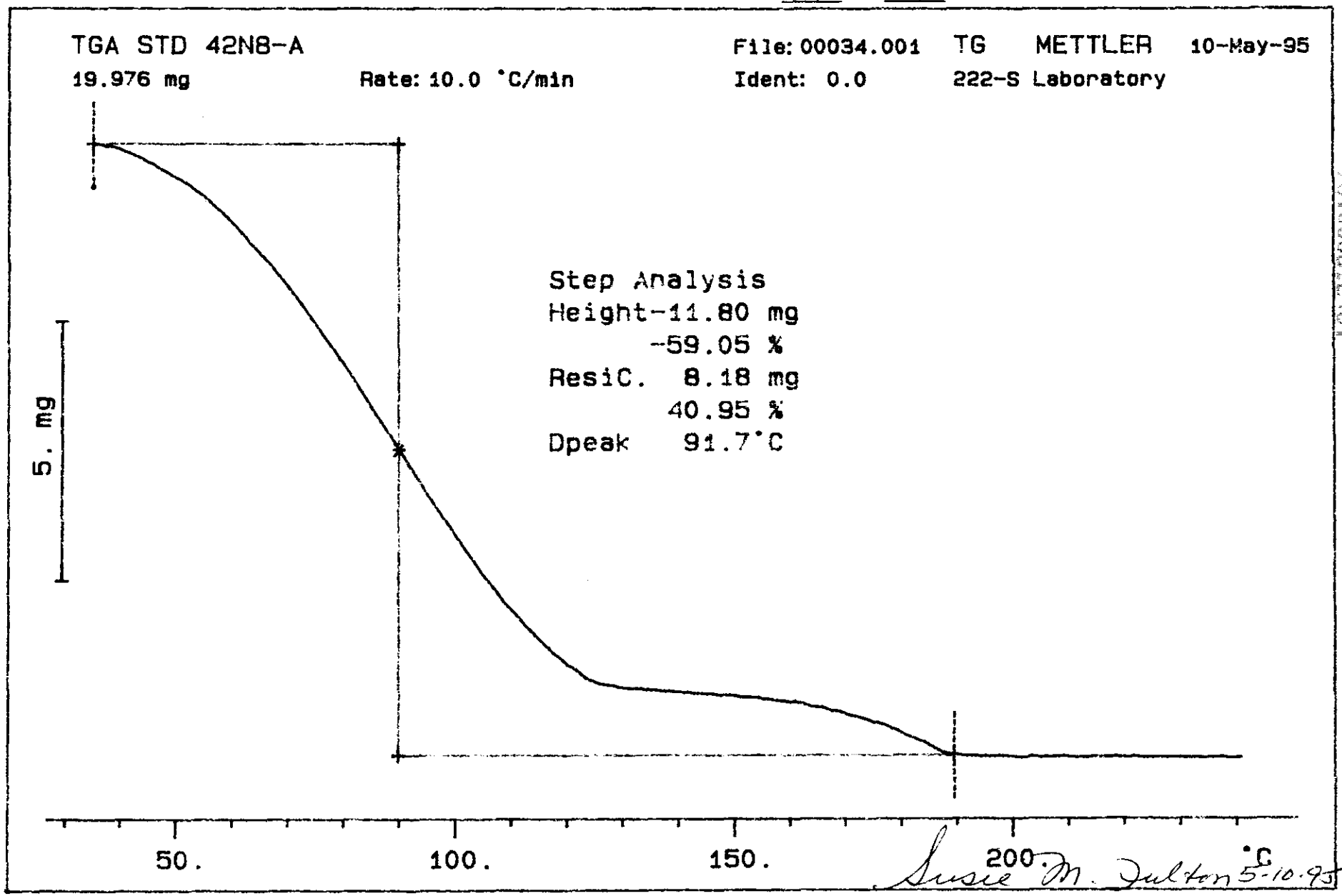
Verified 5/12/95 Jane M. Lyon

Data Entry Comments:

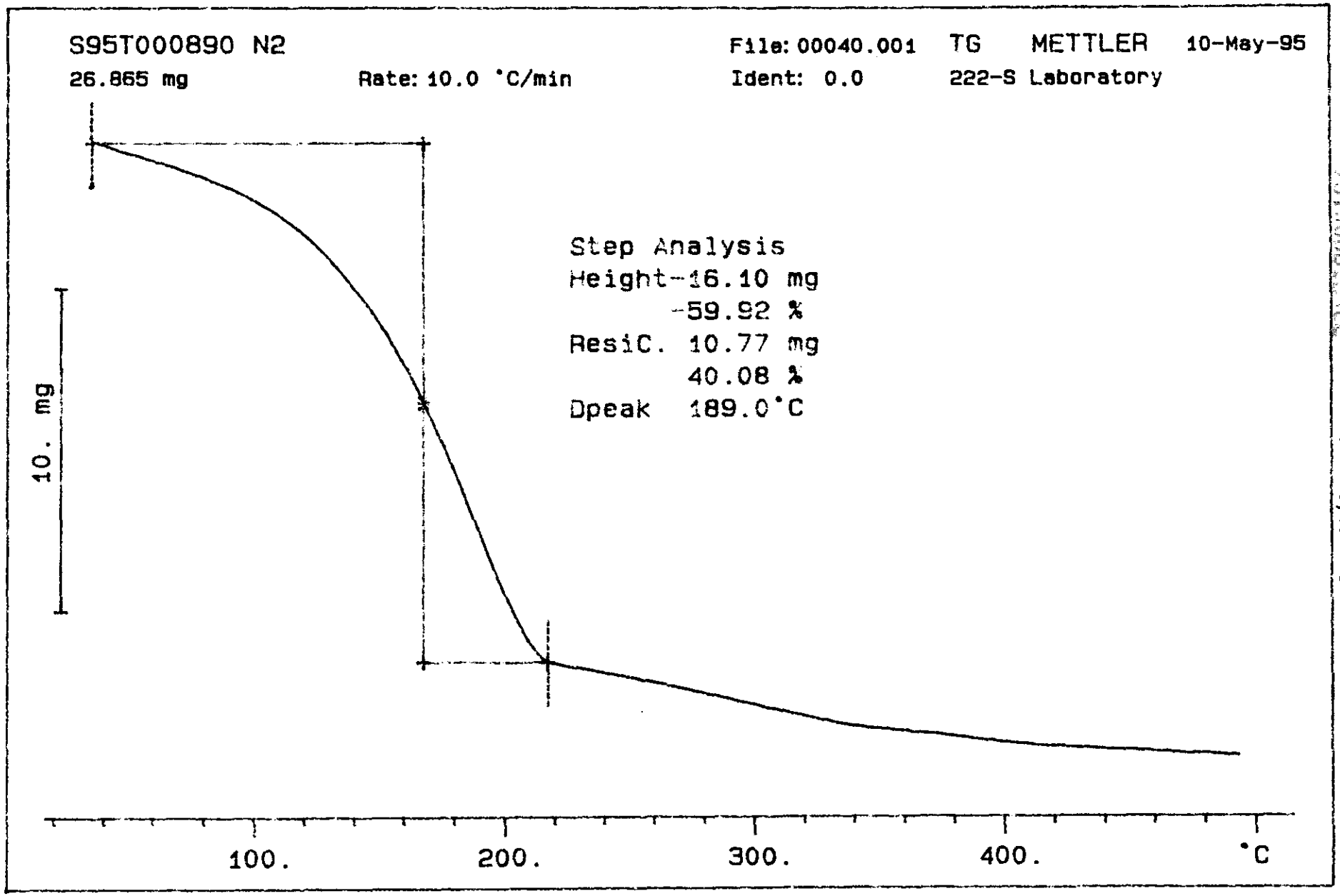
sample is like stiff dark chocolate frosting

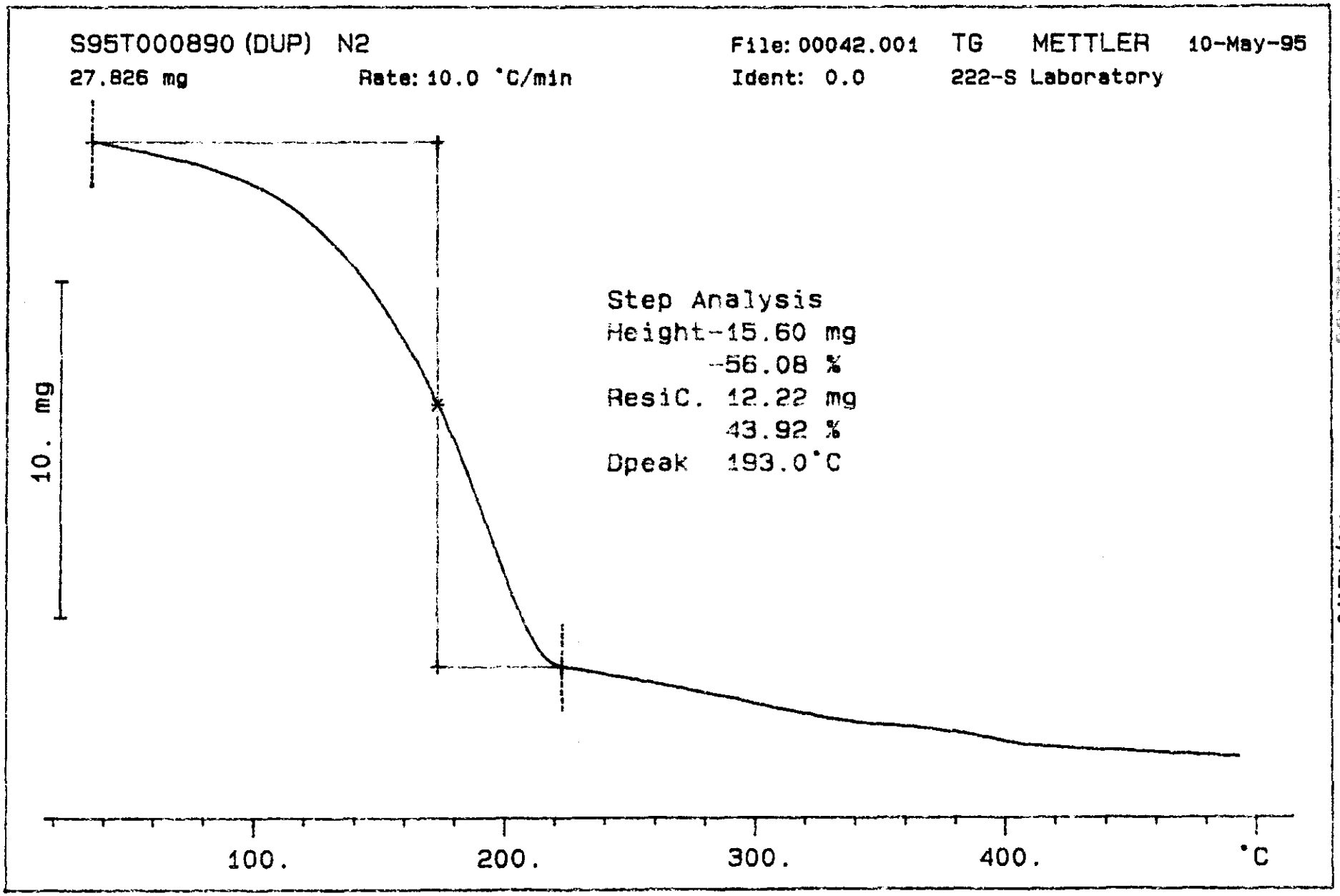
Units shown for QC (SPK & STD) may not reflect the actual units. DL = Detection Limit, S = Worklist Slot Number, R = Replicate Number, A = Aliquot Code.

SIGNATURE BELOW REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 37 TO 39.



Susie M. Dulton 5-10-95


S95T000890 N2
26.865 mg
Rate: 10.0 °C/min
File: 00040.001
Ident: 0.0
TG METTLER 10-May-95
222-S Laboratory
Step Analysis
Height -16.10 mg
-59.92 %
ResiC. 10.77 mg
40.08 %
Dpeak 189.0°C
10. mg
100.
200.
300.
400.
°C



9514682.404

DISTRIBUTION SHEET

To Distribution	From Characterization Plans and Reports	Page 1 of 2 Date: 06/01/95
Project Title/Work Order WHC-SD-WM-DP-115, Rev. 0, "45-Day Safety Screen Results for Tank 241-C-204, Auger Samples 95-AUG-022 and 95-AUG-023"		EDT NO.: EDT-612159 ECN NO.: N/A

Name	MSIN	Text With all Attach	EDT/ECN ONLY
Pacific Northwest Laboratory			
S. J. Harris	K7-22	X	
K. L. Silvers	P7-27		X
U.S. Department of Energy, RL			
C. A. Babel	S7-54	X	
Westinghouse Hanford Company			
J. N. Appel	G3-21		X
H. Babad	S7-30	X	
R. J. Cash	S7-15	X	
J. M. Conner	R2-12	X	
G. D. Forehand	S7-31		X
C. E. Golberg	H5-49		X
V. W. Hall	H4-21		X
D. C. Hetzer	S6-31		X
L. Jensen	T6-07	X	
G. D. Johnson	S7-15	X	
N. W. Kirch	R2-11	X	
J. G. Kristofzski	T6-06	X	
M. J. Kupfer	H5-49	X	
E. J. Lipke	S7-14		X
N. G. McDuffie	S7-15	X	
J. E. Meacham	S7-15	X	
P. M. Morant	H4-25	X	
B. C. Simpson	R2-12		X
D. A. Turner	S7-15	X	
J. A. Voogd	R4-01		X
Central Files	~~L8-04~~ A3-88	2	
EDMC	H6-08	X	
LTIC	T6-03		X
OSTI	~~L8-07~~ A3-36	2	
TCRC	R2-12	2	
TFIC (Tank Farm Information Center)	R1-20		X

DISTRIBUTION SHEET

To Distribution	From Characterization Plans and Reports	Page 2 of 2 Date: 06/01/95
Project Title/Work Order WHC-SD-WM-DP-115, Rev. 0, "45-Day Safety Screen Results for Tank 241-C-204, Auger Samples 95-AUG-022 and 95-AUG-023"		EDT NO.: EDT-612159 ECN NO.: N/A

Name	MSIN	Text With all Attach	EDT/ECN ONLY	
Washington State Department of Ecology Single-Shell Tank Unit Manager S. E. McKinney P.O. Box 47600 Olympia, Washington 98504-7600		X		
Environmental Protection Agency Single-Shell Tank Unit Manager D. R. Einan 712 Swift Boulevard, Suite 5 Richland, Washington 99352		X		
U. S. Department of Energy Jim Poppiti 12800 Middlebrook Rd. Trevion II, EM-36 Germantown, MD 20874			X	
Los Alamos Technical Associates A. T. DiCenso 750 Swift Boulevard Suite # 4 Richland, WA 99352		X		